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EDITORIAL.

A second edition of "Rubber and Railways" was published in September 1939 by the Rubber Growers' Association; it sets out in detail the ways in which railways at home and abroad have applied the properties of rubber in their designs and gives frequent and lucid illustrations most of which even the layman can understand.

The first edition of this booklet was published in 1931, and an analysis of the use of rubber products in British passenger coaches at that time show that the following was fairly representative of established practice:—

	Weight lbs.		*Section percentage*	*Percentage of Whole*
Buffer gear	168	210	27.63	34.53
Drawbar gear	42		6.9	
Suspension	144		23.68	23.68
Braking system ..	9		1.480	1.480
Heating system ..	13		2.138	2.138
Body packings	65		10.69	17.514
Gangways	14½		2.384	
Doors	1½		0.246	
Lavatories	19		3.125	
Window beadings ..	6½		1.069	
Lighting system ..	125½		20.64	20.64

This list takes no account of rubber flooring, which is now commonly used in some types of railway coaches, but even so the high proportion of the total weight of rubber used which is needed by buffer and drawbar gear is rather surprising. The use of rubber has developed extensively since 1931, but the above analysis, it is stated, still serves to show the field for rubber products in passenger coaches, apart from other large uses in locomotives and goods wagons.

The section on Rubber Buffing and Drawbar Springs is particularly interesting. Railway regulations as regards maximum speeds in shunting wagons are comprehensive, but it may be assumed that they are not always rigidly observed. The author (Mr. Colin Macbeth, M.I.A.E., M.A.E., F.I.R.I.) for the purpose of his calculations in some of the examples given takes a shunting speed of 11 miles per hour (16 feet per second) which is not by any means excessive and shows that at this speed, the running weight of a wagon being say 20 tons, it develops a kinetic energy of 80 foot-tons, and the quantity of energy that becomes potential in each wagon on impact is 240 inch-tons. This has to be taken up somewhere, if the comparatively rigid body of the wagon is not to be destroyed, and the buffers take a large part of it. Inside the buffers it is now common practice to use rubber springs, which generally consists of concentric rubber rings. To give an adequate description of the system used is impossible without diagrams, but those with a taste for mechanics are strongly recommended to apply to the Rubber Growers' Association for a copy of this book.

Rubber Auxiliary Bearing Springs on locomotives and tenders, carriages and wagons form another less known sphere in which rubber has proved its usefulness; rubber is used also in the form of hose for braking and heating systems and it is of course used to a large extent in passenger coaches for seating, flooring, draught prevention, etc.

Sections XIII to XV deal with the application of pneumatic tyres to railway wheels, the advantages of which, particularly in respect of lessened damage to the track and increased comfort to passengers, are obvious. The French Railways in particular have done much work in this line, and up to 1st January 1938 Micheline Rail-Car Units had covered a total of 12½ million miles; six of them had done an average daily mileage of 220 to 250 since being put into service. The wheel has an ordinary treaded rubber tyre, together with the steel guiding flange normally found on locomotive wheels. A slightly different system is adopted in the Bugatti Rail Motors, some of which have both the normal steel wheel with flange, and rubber tyred wheels which provide adhesion for acceleration and braking purposes. Development of the use of pneumatic tyres on railways would be of great advantage to the rubber industry and has proved itself an economic consideration from the point of view of railways.

TAILPIECE.

A certain railway line had the reputation of being very badly laid, but the following story regarding it is unconfirmed:—

They were rushing along at the rate of seven miles an hour, and the train was rocking atrociously. Passengers were rolling from one side of the carriage to the other or holding on like grim death to the window-strap. Presently the motion became a little steadier. A traveller smiled faintly at the quiet-looking man opposite him and remarked, "We seem to be going smoother." "Yes," said the quiet man, "we're off the rails now."

QUALITY OF COFFEE.

Writing as a practical planter may I be permitted to make a few observations on the quality of Indian coffee and on the preparation of that coffee for the London market.

I arrived in India in 1921, and for several years we had only to produce the goods in the shape of high yields, for the prices realised for coffee in India and in Mincing Lane took care of themselves. There is little doubt that we produced the goods. The general increase in yields was in my opinion brought about by cutting out the old-fashioned annual hot weather pruning, which would be followed by one or more "handlings" out of the young wood. This system gave way to a hot weather pruning for the third or fourth year, not so much with the object of the tree benefiting from the pruning but in order to keep the shape of the coffee trees within some bounds. The effect of pruning on quality, which is accepted as advantageous to fruit trees, is seldom mentioned in relationship to the quality of Indian coffee. This, coupled with the advent of Bordeaux Mixture spraying, not only increased the yields, but the spraying enabled the tree to ripen the majority of its fruit. Spraying, however, has not overcome the appearance of pales in the roast, which are described by most London Brokers as "unripes", but which would be more accurately described as immature beans, that is undeveloped beans from ripe fruit. It is therefore necessary, under the present methods of cultivating coffee in India, to try and eliminate the pales after the coffee has been picked.

In appearance and roast Costa Rica coffee has attained a very high standard, with an even sample of good colour and shape, giving a good roast free from pales. In Costa Rica great care is taken in washing down, or what is more effective still, hosing down the fermenting vats after removing the fermented coffee. After the vats are cleaned of all saccharine matter and of every single bean they are finally washed down with a solution of lime water. They are also careful that during the process of fermentation the coffee is covered day and night, either by means of a shed built over the vats or by very careful covering with mats. This is said to ensure a more even fermentation, and it is obvious that to leave the top layer of fermenting coffee exposed to the sun will produce an uneven sample.

The washing channels used in Costa Rica are undoubtedly the best method of eliminating 'lights' and 'semi-lights', which has been brought to our notice up to date, but it is doubtful whether the Indian planter is prepared at present to meet the expense of constructing washing channels. Again there is often the difficulty of obtaining sufficient water. The whirlpool separators used in Kenya are said to be satisfactory, but even the introduction of whirlpool separators will entail some alterations.

Much, however, can be done under existing conditions, and I suggest that a higher percentage of 'lights' can be removed if they are floated off before fermentation when they are still slippery and the beans are in a freer state of separation. Then after fermentation and washing, when wet parchment coffee is taken out of the washing vats and spread on the drying ground and a small percentage of parchment beans will be found to be green in colour. These beans can easily be recognised and picked out while the coffee is still wet, and it is likely that it is this type of bean, which, when dried, may be overlooked in garbling, and spoil the appearance of the coffee in the roast.

Mr. Rutherford has written an excellent article on the subject of preparing coffee for the London market, and if his advice were closely followed I am sure that the general standard of estate preparation would be far higher. There is one point, which I do not remember if he mentioned in his article, but which was pointed out to me by a Costa Rica planter, and that is that most of their coffee is dried artificially owing to the prevalence of showers during the harvesting season. Artificial drying is said to have disadvantages, but it has got one advantage. It prevents alternating,—contraction and expansion of the bean which usually takes place if the coffee is sun-dried and remains uncovered during the night. This contraction and expansion caused by the very extreme differences in temperature between the heat of the midday sun and the cool of the night tends to bend the beans into what are commonly known as boat-shaped beans. This may be avoided to a large extent if the parchment coffee is covered while it is still warm from the heat of the sun, thus maintaining a more even temperature throughout the 24 hours.

While in India I experimented with slow drying on the assumption that it might produce better colour, but I came to the conclusion that if the coffee is heaped thickly in order to dry slowly it is impossible even with constant turning to ensure an even dry. I feel it is much more practical to spread the coffee not too thickly, as the evenness of drying which will give a good roast is preferable to a coffee with a better colour giving an indifferent roast. Curers have from time to time informed planters that the final drying down could best be done by them on the West Coast. It may be the case that it is advantageous for the curer to dry down to the last pound per bushel, but it is essential that the coffee should be dried sufficiently on the estate to allow no alteration to take place in the state of the coffee from the time it is taken off the drying ground to the time it is laid out on the drying grounds at the curing works.

During the last two years a new interest has been taken in Indian coffee by London buyers, not only in the higher priced coffees but also in the more ordinary coffees. It may fall to India to supply a greater share of coffee to the United Kingdom for the duration of the war, but if this market is to be maintained after the war it is essential that India should take the greatest care in the preparation of coffees usually placed on the London market. If this is done, and if it is possible to maintain a high standard, then there is a strong possibility that a market created by the war may be maintained after the war.

R. O. OLIVER.

Note on Mr. Oliver's letter on Coffee quality. By Mr. W. W. Mayne, U.P.A.S.I. Coffee Scientific Officer.

I have read Mr. Oliver's letter with much interest and with general agreement with his views. The following notes are mainly a reinforcement of his remarks together with some reflections and additional observations bearing on them.

I agree entirely that the cultural operation most likely to influence quality is pruning but unfortunately at the moment no experimental evidence on this question is available for Indian conditions although it is under investigation. Two lines of work being developed in Kenya, however, both bear on the question of pruning. The interesting results from comparing quality of coffee derived from single stem and multiple stem trees in that country indicate the importance of the tree form while the recent work on the leaf/crop ratio focusses attention on control of leaf and crop by pruning methods. We do not know how the results obtained there may be applicable to the vastly different conditions in India but they serve to emphasise the importance of pruning in relation to quality.

It is clear from Mr. Oliver's letter that the major problem is the elimination of "pales" in the roast. Although the trade calls them "unripes", I consider that Mr. Oliver's description of them as immature beans is more satisfactory. It is not out of place to note once more that the descriptive terms frequently used by coffee dealers mean little from an agricultural point of view and cannot be accepted as explanations of the causes of the defects. At the same time, it must be admitted that at present we can only guess at the nature of "pales" and the suggestion made that they are immature beans is not the only possibility. Until we know something of the causes of "pales", the only method of dealing with the problem is to remove them at some stage in the preparation of the coffee for the market.

Mr. Oliver draws attention to the high standard of evenness shown by Costa Rica coffee and comments on the care taken in fermentation. While of course cleanliness in any fermentation process is most desirable, it seems unlikely that provided a reasonable standard is maintained, extreme methods are at all necessary. Recent work in Kenya shows fairly clearly that provided beans are undamaged tainting or other damage from polluted water is of small importance. The trend of most recent work suggests that provided the beans are not injured in pulping or previously, they do not take up materials at all readily such as to modify their character. These remarks must not, of course, be utilised as an argument for the neglect of simple rules of cleanliness in fermentation, but only as suggesting that changes in the direction of partial sterilization of vats, etc. are unlikely to solve our more pressing problems.

I consider that the freedom of Costa Rica coffees from "pales" cannot be attributed to fermentation methods. The reason is more likely to lie in the trees themselves. It seems to me that the great problem in Indian estates lies in the extreme mixture of trees both with respect to age, disease and pest history and variety. The indications of recent work tend to suggest that many defects in quality of samples are due to the presence of a few beans perhaps derived from certain trees which affect the whole sample out of all proportion to their number.

The identification and elimination of such trees and the establishment of coffee areas of good quality trees is work of long range and cannot be considered of practical interest for the immediate problem. As Mr. Oliver rightly says we can only attempt at present to eliminate defective beans after the coffee is picked.

The sorting by washing channels holds the field at the moment as the best method of eliminating the lighter and poorer beans but so far there are no data for S. Indian conditions although it is hoped that information will soon be available. The great problem in S. India is that the majority of estates have insufficient water for such methods. With regard to the efficiency of this method we know nothing in India but I have a little information collected in another connection which is not without interest. In some work on the green coloured beans mentioned by Mr. Oliver, I found that when taken from the washing vats, samples of green beans and of normal beans were almost identical in weight (Mean weights of 150 beans of each type taken at random in six lots of 25 beans) but very considerable differences developed on drying. In every case, green beans gave rise to extremely defective dried beans. It suggests that these poor beans at any rate are unlikely to be eliminated by washing channel methods. Further, the weights of equal numbers of so-called pale raw beans and of normal beans were recorded from a single sample of dried coffee. The pale raw beans were 4.7% lighter than the normal beans and this difference was statistically significant. In the light of the work on the green beans which showed as much as 20% less weight after drying although the wet weights showed no significant differences, it must be doubtful whether these pale raw beans could be separated on the bases of weight differences when wet.

It must be understood that these experiments were made with parchment coffee after fermentation and washing. No tests have been done with beans prior to fermentation and Mr. Oliver's suggestion of separating lighter coffee at this stage deserves investigation. I do not think, however, it can be maintained that beans are in a freer state of separation at this stage and difficulties are likely to be met wtih owing to adherent pulp and air bubbles.

With regard to the green beans, these invariably give bad dried beans, small dried wrinkled beans heavily coated with adherent silver skin. From my observations, there seems little likelihood of their being missed in ordinary efficient garbling. It is likely however that there are all gradations between the obvious green bean and the normal straw yellow bean (*i.e.*, as the parchment appears after washing) and that differences may not be detectable by eye although these 'intermediates' may give rise to poor beans. I am inclined to think that beans described as "dry and coated" on the Coast probably arise from beans which, if not actually green in colour when wet, are suffering from a similar defect in a less marked form.

If their separation is not possible when they are wet by channel methods, they are probably lighter when dry and might perhaps be separated by some form of gravity separator at this stage.

The importance of the irregularity of drying when sun drying is used has rarely been considered as seriously as it warrants. In experimental drying of small samples weighed at frequent intervals it was noted that while the weight of the samples decreased during the day, they increased again during the night even although the samples were brought indoors overnight. The process of drying was a one of alternating loss of weight and gain of weight by absorption from the air. Although in the letter the emphasis is placed on contraction and expansion from temperature differences, I should be inclined to emphasise rather the fluctuations in moisture content depending on temperature and humidity changes through the day. In any case the recommendation to cover the drying coffee before the temperature drops too greatly seems sound. It would be of interest to investigate the possibility of more careful protection of drying coffee overnight than is normally practised. The wide daily temperature variation experienced through the crop season involves wide variations in the humidity of the air and coffee, especially in the later stages of drying, takes up moisture from the air very readily. The normal coconut matting covering does not seem a very adequate protection against this moisture uptake.

The general problem must be an attempt to improve the evenness of our product. In the long run the only way to do this is to improve the evenness of our plant material. In the meantime, any suggestions likely to improve the separation of poor quality beans or to make the final product less variable are worthy of careful consideration.

RUBBER AND QUOTA PRICES.

The approximate current prices in Kottayam on 23rd December 1939 were:-

Rubber, 1st class R.S. Sheet	..	25.00 cents a lb.
Rubber Export Quota (forward)	..	14.00 cents a lb.

INDIAN COFFEE IN SWITZERLAND.

Report of the Director, Indian Coffee Propaganda, on his second visit to Switzerland.

I revisited Switzerland in July 1939. On arrival at Zurich I visited the Swiss National Exhibition. The Indian Coffee Market Expansion Board had presented to the Coffee Committee of this exhibition ten bags of Indian coffee, made up of two bags of Native Monsooned Malabar A.A., two bags of Native Monsooned Malabar P.B., two bags of Mysore, two bags of Nilgiri and two bags of Coorg. As it was very necessary that the types of coffee which are most popular in Switzerland be represented, the Board purchased the Native Monsooned Malabar in Switzerland, but the six bags of Indian coffee were almost entirely supplied from coffees which had been presented most generously to the I.C.M.E. Board by producers in S. India for propaganda purposes. The Coffee Committee of The Swiss National Exhibition kindly met the cost of freight on these coffees from Antwerp to Zurich and the import duty charges upon entry into Switzerland.

The fact that Indian coffee was available for serving at this exhibition will undoubtedly encourage a further consumption of Indian coffee in Switzerland, and the results should fully compensate the Board for their small capital outlay. The importance and size of this National Exhibition cannot be described in a few words. The exhibition was visited by practically the whole population of Switzerland, and it was pointed out to me that many Swiss people residing abroad had arranged for their holidays to coincide with the exhibition.

The Coffee Exhibit consisted of a Pavilion on the south bank of the Lake of Zurich, in which the story of coffee from the plantation to the cup was depicted by means of photographs combined with wooden cutout displays in such an effective and realistic form that the pictures told the story of the various stages through which coffee passes, from the tree to the cup, with the minimum of descriptive wording. Samples of every type of coffee imported into Switzerland were shown, including all types of Indian coffee imported and I was left with the impression that the Swiss understand displays, particularly photographic displays, better than we do in England. Coffee was served in rush hours on a terrace outside this Pavilion looking out over the lake, when the principal coffee exhibit, in the form of a Coffee Ship moored alongside the terrace, was unable to accommodate all the visitors. The Coffee Ship was painted in gay colours and dressed with bunting. The main deck was covered by an awning from which striped curtains could be lowered to afford protection in bad weather. On this deck to the port side a Coffee Bar had been erected, leaving the remainder of the deck space free for small tables and chairs. Below deck a small Smoking Saloon was constructed and lit by hanging lanterns, which swung slightly as the ship rose and fell with the gentle swell of the water. This Smoking Saloon proved very popular as the evenings advanced and the temperature fell. During the time I was in Zurich, Nilgiri coffee was served on each day. This would be followed by a week for the serving of Mysore coffee, a week for Coorg coffee, and so on until all the different types of coffee presented to the exhibition committee by the producing countries were served in rotation. The Chairman of the Coffee Committee informed me that the Indian coffee days had proved most popular, particularly when Nilgiri and Coorg coffees were served. Less was said about Malabar coffees, as these are well known in Switzerland and needed no comment. I was told, however, that the Mysore coffee was disappointing, which was all the more surprising as the Mysore coffee presented was of exceptionally good quality. (On my return to London I had a small quantity of this coffee tasted and it proved to be of outstanding liquor. Later I received a letter from the Chairman of the Coffee Committee informing me that since my visit the Mysore coffee was blended with a small proportion of Malabar and produced a blend that was much appreciated.) On each table two cards were placed, one indicating what coffee was being served on that day, pointing out the merits of the coffee and giving a brief description of the coffee plantations in the country of origin. The other card gave a list of coffees which could be served on request, including Porto Rico, Indian, Central American Blend, Mocha Blend, Brazil Blend and Java Blend. The Coffee Ship was open to the public and a charge was made for each jug or cup of coffee served, but members of the trade could taste any coffees free of charge on presentation of a complimentary ticket. The Coffee Ship exhibit was an outstanding success, and its original setting enhanced the popularity of the beverage. I have never seen a setting to equal it at any of the large empire or foreign exhibitions which I have had the pleasure of visiting.

Winter Sports Resorts.—The Board decided that it would be more practical to arrange for established Cafés in the Winter Sports Resorts of Switzerland to serve and advertise Indian coffee than for the Board to organise and run their own café. This latter idea was shelved, as we wished to avoid the possible danger of interfering with the trade and with other café proprietors. I visited Davos Dorf, Davos Platz, St. Mortiz and Pontresina, and in each of these four centres I arranged for well-known café to serve exclusively Indian coffee. It was also possible to arrange with the retailers in these centres to supply the cafés with Indian coffee, as I found that the retailers in question all obtained the majority of their supplies of coffee from one of the largest Retail Buying Unions. Finally I called on the Coffee Buyer of the Buying Union situated in Central Switzerland, when he agreed to purchase a quantity of really fine Indian Plantation coffee with which to supply the shops in question. This arrangement will not only have the effect of Indian coffee being brought into prominence through the customers of the cafés, but some of the retailers have large interests in the hotels, and if they find the coffee to be as good as anticipated there is no reason why Indian coffee should not find its way into these hotels. High-class hotels are willing to pay a high price for good coffee. Again the Retail Buying Union hope that they also will find a market for really fine Indian coffees, samples of which the Coffee Buyer tasted during my visit. He found that the samples which I had given him and which were the coffees sent by our Board to the Zurich Exhibition were far superior to the fair average Mysore/Coorg Plantation coffee which they already purchased in small quantities. Although the tendency in Switzerland is to buy cheaper coffees there appears to be room for a limited trade in what they would probably describe as luxury coffees.

Contacts.—I revisited several firms I had had the pleasure of meeting previously, including a firm who are probably the largest buyers of Indian Plantation coffee. This firm were interested to learn that owing to the large stock of Indian coffee in London this year they could obtain very excellent Indian coffees at reasonable prices. I understand that they have been in communication with a firm in London regarding these coffees.

Several new contacts were made, and it was possible in many instances to supply the information required regarding Indian coffee. In the case of one particular contact with a firm whose manufactured food products are distributed all over the world, I was able to bring to notice a type of Indian coffee well known in France, but little known in Switzerland, *viz.*, Basenhully. This firm considered that Native Monsooned Malabar A.A. improved their blend, but on account of the relatively high price of Malabar coffee in Switzerland its inclusion in their blend was not justified. Whilst they appreciated the liquor, size and colour of Malabar A.A., they pointed out that size and colour were of no importance to them and that they purchased coffee solely on the liquor. They were most interested to hear that Monsooned Basenhully which, I pointed out, was a small size of Malabar, would produce the same liquor and could be purchased at a cheaper price. As a result of the information I was able to place at their disposal, I was passed on by the Buying Department to the company's Chief Chemist, and eventually had a most interesting talk with the Managing Director. He expressed an interest in the work of our Board, and besides saying that he thought they would be able to purchase Basenhully, and thereby use a fairly high proportion of Indian coffee in their blend, he offered to help me with introductions to other important Swiss firms. He also asked me to be sure to call on the Manager of their London Factory, as he was of the opinion that such a meeting would be to our mutual advantage.

General.—Propaganda for Indian coffee was started at The Swiss National Exhibition. It will be continued at selected centres by means of the catering and hotel trade. The most difficult task is to set the ball rolling, but when a move has been made the rate of acceleration becomes more rapid, and in this way we hope to introduce Indian coffee more generally to that prosperous Swiss industry, the hotel trade which requires a high-class coffee and which is in a position to pay a good price.

The advantage of personal contacts to promote friendly relationships cannot be over-estimated. In meeting severe competition a relationship based on mutual trust and goodwill forms a good foundation on which to promote trade.

In conclusion it is possible that the Board will not spend in full the grant for Continental publicity during the financial year. Any saving which the Board may be able to make will strengthen our position when we have to meet increasingly higher expenditure in the future on Continental propaganda, as our publicity develops.

INDIAN COFFEE CESS COMMITTEE.

Review of the Activities of the Indian Coffee Cess Committee in India during the third quarter of 1939.

During the period under review, the Executive Sub-Committee of the Indian Coffee Cess Committee met once, on the 9th July 1939.

Among the subjects considered by the Sub-Committee was the question of providing additional funds in the current year for propaganda work in India. Agreeing with the recommendations of the Market Expansion Sub-Committee in this behalf, the Executive Sub-Committee raised the budget allotment for this work from Rs. 55,300 to Rs. 75,500.

The Sub-Committee also declared the absence, out of India, of Mr. St. John Hunt as a casual vacancy on the Executive Sub-Committee, and requested Dharmapravartha M. L. Nagappa Setty to serve on the Sub-Committee in this vacancy.

Another subject which received the attention of the Sub-Committee was the loss of the Ceylon market for Indian coffee. Decades ago, Ceylon used to import up to 900 tons of raw coffee from India. Of late, such imports had shrunk to a few tons, and in 1938/39 such imports were nil. Samples of Java Robusta coffees sold in Ceylon had been obtained and examined as to their quality and price. They were disappointing. There is no coffee, Arabica or Robusta, grown in India, that could compete, price for price, with Java Robusta in Ceylon after paying an import duty of 10 cents per pound. If, however, Ceylon were prepared to allow entry to Indian coffee duty free, there were some hopes for Indian coffee. The Sub-Committee, therefore, decided to bring this matter to the notice of the Government of India and the local Governments in South India.

That representations be made to the Governments of Madras, Coorg, Travancore and Cochin to introduce in their respective territories legislation on the lines of the Mysore Coffee Husk Control Bill, and that the period of appointment of the Director of Indian Coffee Propaganda be extended by three years, were two other decisions taken by the Sub-Committee at its meeting in July.

During the period under review, Mr. Karavanda Chengappa, a member of the Committee representing the Coorg Agricultural Department, resigned his seat on the Committee, and, in his place, Rao Sahib M. S. Mandanna was nominated.

At Lahore, Indian Coffee House registered slight progress. From 1,609 cups in June, the monthly sales rose to 2,037 cups in July, 2,288 cups in August, and 2,393 in September.

Indian Coffee House, New Delhi, started working on the 25th August, with a sale of 87 cups of coffee. The next day, it sold 143 cups of coffee. From this level, the average daily sales rose to 240 at the end of September. In total, this Coffee House sold 6,688 cups of coffee in September.

At Bombay, two more Coffee Houses were opened: one on Lamington Road on the 17th July 1939, and another on De Lisle Road on the 20th October. Indian Coffee House, Mohammed Ali Road, registered slight progress in July, but since then sales have declined. From 18,480 cups in June, sales rose to 19,319 cups in July, but fell to 15,151 cups in September. At Parel, the monthly sales rose from 6,684 cups in July to 7,500 in August, but fell to 6,532 in September. The Lamington Road Coffee House sold 8,176 cups of coffee in August and 7,711 cups in September.

In Secunderabad, one Coffee House was opened in General Market on the 20th August. All the three Coffee Houses opened in Hyderabad–Secunderabad area made good progress during the period under review. The sales in Pathergatti Coffee House steadily rose from 7,452 cups in June to 12,718 cups in September. At James Street, the sales rose from 6,285 cups in July to 11,169 cups in September. In September, the General Market Coffee House sold, in all, 14,004 cups of coffee.

The work at Salem was closed down on the 30th September. The Demonstration van was recalled to Bangalore, and the staff disbanded.

The Coffee Demonstration Party working in Kottayam in Travancore, having finished its work in Kottayam, moved on to Thiruvalla on the 21st August, where it continued to work till the end of September. The other two Parties working at Cochin and Calicut continued to work in these places.

The Committee also participated in the All-India Khadi and Swadeshi Exhibition held at Salem from the 6th to the 20th of August.

TEA QUOTA PRICES.

The Quota prices ruling in South India on 3rd January 1940 were:—

Tea Export Quota	6 annas 9 pies per lb.
Internal Market Rights ..	2 pies per lb.

IMPREGNATION OF TEXTILE FIBRES WITH LATEX.

NEW DEVELOPMENTS.

*By B. A. Harold**

A stable, transportable rubber latex has been available for application to textiles from the standpoint of commercial plant practice for the past ten years. In this time much development work has been carried out for the purpose of producing a textile fabric which might be truly termed "perfectly impregnated."

From a casual standpoint, the first impression formed is that this effect should not be difficult. There are present two colloidal bodies: (1) a fibrous mass, either cellulosic or proteinous, and (2) the rubber hydrocarbon, the latter supposedly dispersible in the former. At the present writing, however, rubber technologists do not affirm the presence of any textile fibre in which there exists the rubber hydrocarbon dispersed from rubber latex in the micellar structure of the fibre. They do, on the other hand, accept the micellar dispersion of rubber into a fibre-like cellulose from a volatile solvent solution (such as benzine) of the rubber.

The question now arises as to why a textile fibre perfectly impregnated with rubber has been so eagerly sought. The answer is that while the extra strength and elasticity added by rubber to a fibre are decided assets, the harshness, tackiness and drag of a rubber surface, which latex leaves when deposited upon the external surface of a fibre, are objectionable.

The research work which has been done along the above lines has proved interesting, and the writer will review in the following the three lines of approach which have been pursued for producing a well, but not perfectly, impregnated textile fibre from rubber latex.

Bongrand's approach was from the "dyeing" standpoint. He attempted to ascertain the optimum conditions which favoured good dyeing, which, after all, involved similar conditions, *i.e.*, the exhaustion of one colloidal body (dyestuff) within the micellar structure of another body (fibre).

It was found that the waxes, gums and fats found present in unwashed and unbleachable cotton fibres offered resistance, which had to be overcome by kier boiling and bleaching. Slightly twisted threads hindered impregnation, and Bongrand found tight twisting to be unnecessary as the rubber subsequently bound the fibres as well as twist together.

It was erroneous on Bongrand's part to compare a latex bath with a substantive dyebath as they differ in one fundamental respect—their coagulability. A dyestuff when coagulated from solution by an electrolyte still possesses a particle size which is apparently less than the fibre interstices and, therefore, does not hinder further penetration by other dye micelles. With rubber latex, on the other hand, it was found that every factor which promoted coagulation at the point of contact with the fibre acted in opposition to further penetration. A film of rubber was found to be a much greater obstacle than the original pectin wax and fat, and to effect proper penetration it was necessary to prevent the formation of the rubber films.

Bongrand noted that the pH of the moisture found in textile fibres was acidic—pH 3.5 to 4. This was a disadvantage inasmuch as acid will readily coagulate the average Hevea type of latex. Hence, the greater the penetration of latex into fibre, the greater the tendency to coagulate with film formation. It was observed that when the pH of the latex bath which is around 11.4 and that of the fibres had the same or nearly the same value, then conditions were most favourable for impregnation. This could easily be carried out by changing the pH of the fibres to that of the latex with proper alkaline compounds. In the case of Funtimnia latex, which is stable to acid, the adjustment is simpler, as the pH of the latex is adjusted down to that of the fibre.

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* From the American Dyestuff Reporter, May 15, 1939.

THE 'FILASTIC' PROCESS.

Bongrand's experiments resulted in the production of a new textile thread known as Filastic. Its advantages over elastic threads lay in the fact that (1) the rubber which might consist of 50% of the impregnated thread was uniformly distributed from centre to outside; (2) it did not possess the tack of other threads, and (3) it could be woven without difficulty as it was perfectly dry.

The principal features of the filastic process are :

(*a*) Prolonging the time of contact of the latex and textile thread which is indispensable for perfect impregnation.

(*b*) Overcoming the tendency of the latex to drain away.

(*c*) Fixing the latex on the fibres by means of an operation which is termed "maturation." The spools of thread are placed on a spindle on a disc which rotates in a vertical plane. As a result of this rotation, any latex which tends to drain away is absorbed again by the spool. The latex is kept in a liquid state by rotating the spool in a moist ammoniacal atmosphere kept at a controlled concentration. The penetration of the latex amongst the fibres proceeds during this first stage of the maturation process.

The second phase of the process depends upon the fact that between the original state of dispersion of the rubber in the latex and its final stage of coagulation, there is an intermediate state, the "gel" state. Here the rubber remains immobilised on the fibres and no longer separates from the latter. At this stage the impregnated spool can still be unwound, an operation which could not be done were the rubber already coagulated. When the spool is unwound, the thread is passed through a coagulating bath, and the rubber gel is converted into a true coagulum. The contraction which takes place by reduction in the diameter of the thread completes the penetration of the rubber among the fibres.

An interesting property of this thread is that when dry it absorbs rubber latex very readily. Thus, it may be given a second impregnation whereby more rubber or any other substances may be added which will modify the chemical, physical or mechanical properties imparted by the first impregnation.

Products made from the filastic thread, such as fish nets, shoe laces, tennis nets, braided hose, as well as conveyor and transmission belting, are claimed to be impermeable, rotproof, mouldproof and highly resistant to abrasion.

STEVENS' METHOD.

The second approach to a perfectly impregnated fibre was made by Stevens & Stevens, whose ideas involved the incorporation of materials into rubber latex which would offset disadvantageous properties of the average latex finish. They produced a fibre which was free from tack, and in doing so concluded that although the true impregnation of cellulose by rubber latex appeared unlikely, it could not be ruled out altogether. They pointed out that previous work on the so-called impregnation of cotton threads was a coating process and not one wherein rubber was deposited within the interstices of the fibres.

From a theoretical standpoint, Stevens & Stevens stated that cellulose, like rubber, was an inert substance of colloidal nature and indefinite constitution. The impregnation of one colloid by another (cellulose by rubber) was unlikely, for a colloidal membrane will hold back colloidally dissolved materials while allowing crystalloids to pass. Cellulose and rubber are different types of colloids as the former is normally hydrophilic, while the latter takes up organic solvents more readily. Rubber does have the power, however, of absorbing some moisture which probably results from the crystalloidal and other impurities contained in raw rubber, as the purer the rubber, the less the moisture absorbed.

Stevens & Stevens attempted to produce a cloth, which after being impregnated with latex, would show a minimum degree of tack. One interesting point was proved in their research, and this was that cloth when treated with a vulcanised latex-starch mixture and subsequently soaped and washed was not as tacky as cloth impregnated with an unvulcanised latex-starch mixture. It was shown, however, that the vulcanisation of the latex did not improve the wash fastness of the finish. The results of the latter tests are shown in Table I.

TABLE I.

Comparison of Percentage of Latex finish removed by washing.

Latex-Soluble Starch Mixture (Unvulcanised).

Composition of Finishing Mixture.	*Percentage Dry Finish on Cloth*	*Percentage of Finish Removed by Washing.*
30% Solution Soluble Starch	27.1	100
50cc. ,, ,, ,, + 2.5cc. Latex	28.4	92.5
50cc. ,, ,, ,, + 10cc. ,,	26.5	83.5
50cc. ,, ,, ,, + 50cc. ,,	31.4	33.5
50cc. ,, ,, ,, + 25cc. ,,	28.7	19.5
Latex Alone	32.8	7.0

Latex-Soluble Starch Mixture (Vulcanised).

30% Soluble Starch Solution alone ..	27.1	100
50cc. ,, ,, ,, ,, + 2.5cc. Latex	27.5	98.0
50cc. ,, ,, ,, ,, + 10cc. ,,	29.4	74.5
50cc. ,, ,, ,, ,, + 50cc. ,,	32.8	48.5
50cc. ,, ,, ,, ,, + 250cc. ,,	34.9	27.0
Vulcanised Latex Alone	34.3	6.8

The two investigators evolved a finish upon cotton cloth which was free from tack, by incorporating a wax in with the latex. This was carried out as follows :

Paraffin wax was emulsified with triethanolamine stearate, and the emulsion mixed with latex in various proportions. Cloth samples were padded three times with this mixture, while drying the cloth after each padding. It was found that not only did the wax remove the tack, but the presence of the vulcanised rubber in the finish retarded the extraction of the wax in dry cleaning, a disadvantage possessed by straight wax finishes. The addition of China clay to the wax-latex emulsion was found to increase the resistance of the finish to benzene solvent. The retardation of wax removal by the rubber from the cloth while being subjected to six successive treatments with benzene is shown in Table II.

TABLE II.

Retardation of Wax removal by Rubber.

% Wax on Dry Rubber Content of Finishing Mixture.	*% Initial Dry Finishing Materials Removed after Six Successive Treatments with Benzene.*					
Pure Wax Finish ..	92.0	100.0	..	..	..	..
250	56.0	70.5	79.5	83.0	84.0	85.0
140	37.2	47.5	51.2	56.5	58.2	66.2
100	26.0	33.5	34.5	39.0	41.2	45.7
80	24.0	30.0	40.0	43.0	45.0	48.0
40	18.7	19.2	19.6	24.0	24.7	25.2
Pure Latex Finish ..	2.1	2.1	2.1	4.0	4.5	5.9

BLOW'S ATTEMPT.

The third approach to a perfect latex impregnated textile fibre was attempted by Blow, who worked with wool fibres. His angle of approach was purely from the standpoint of the electrical charges possessed by the various bodies present, and varying these in order to produce a state of optimum attraction.

Blow maintained that in the usual coagulation methods wherein rubber is deposited upon the fibre there does not occur true deposition, as the rubber hangs but to the outside of the fibre. He therefore attempted to produce a true state of absorption between fibre and rubber particle.

It was realised that inasmuch as the particles in rubber latex are negatively charged, good deposition of the rubber would occur if a strongly positive surface were presented. A soluble compound which, when in solution, was strongly positive, had to be sought; one which would be strongly absorbed by wool, and thus render it positive. Secondly, it would be necessary that the compound be mutually absorbed by both the rubber and the fibre and thereby serve as a bonding agent. Blow found that the new cationic soaps constituted compounds of this nature.

USE OF CATIONIC SOAPS.

Recent textile literature has offered detailed description of these new compounds, which lend unusual softening properties to textile fibres. Unlike regular soaps wherein the positive ion is the metal (sodium or potassium), and the negative ion or anion is the long chain constituent, cationic soaps contain the latter as the positive ions with halides or sulphates as the anions. The hydrophilic group (cation) of these soaps which is attached to the long chain of carbon atoms is quaternary ammonium, sulphonium or phosphonium group. Typical cationic soaps are cetylpyridinium bromide and dodecyltrimethylammonium bromide.

Cationic soaps are strongly absorbed by textile surfaces, and by reason of the positive charge of the absorbed long chain ion render the surface of the fibres positively charged. On immersing fibres treated with one of the cationic soaps into a rubber latex solution consisting of negatively charged particles, deposition of the rubber occurs. As the molecule of the soap contains an aliphatic chain which is soluble in the rubber, there occurs a true bond between the fibre and the rubber. Thus, the four properties possessed by cationic soaps which encourage this true absorption are :

(1) A positively charged absorbable ion.
(2) A group absorbed by textile surfaces.
(3) A group soluble in the rubber hydrocarbon.
(4) They possess good wetting properties.

Blow showed that the deposition of the rubber was definite and irreversible as the fibres could be rinsed without appreciable loss of rubber. The results of experiments are shown in Table III.

TABLE III.

Rubber Content.

Latex Treatment of Fabric.	*Untreated Wool.*	*Wool pretreated with Cationic Soap.*
Immersed in 50% Latex, squeezed and dried	3–4%	12%
Immersed in 5% Latex, washed and dried ..	0.25%	10%

It is interesting to note that Blow was able to take a negatively charged rubber latex, render it positive by the introduction of a cationic soap, and truly deposit the rubber therefrom upon a wool fibre. Pieces of wool fabric, before and after chlorination were immersed in latices of 5 per cent. dry rubber content for thirty minutes, removed and washed, squeezed, hydro-extracted and dried. As shown in Table IV, chlorination markedly improved the absorption properties of the wool, and it is evident that an alkaline latex is unnecessary for true deposition.

TABLE IV.

Rubber Latex (5% Dry Rubber Content).

Stabiliser	*Particle Charge*	*pH*	*% Rubber in Fabric*	
			Unchlorinated	*Chlorinated*
None	Neg.	Alkaline	0	0
Cationic Soap	Pos.	Alkaline	6.0	11.5
Cationic Soap	Pos.	Acid	Trace	1.9

One of the best approaches to the problem of true fibre impregnation by rubber latex was made by Hauser and Hunemorder.

In their experimental work, cotton threads were immersed in gelatin, which was frozen. Line sections were cut by means of micotome. In order to determine whether true impregnation had occurred, these sections were immersed in concentrated sulphuric acid, followed by a rinse. Thus, any unimpregnated and exposed cotton were destroyed by the acid, while the latter rendered the rubber a reddish-brown colour. The results were then ascertained by photomicrographs.

Hauser and Hunemorder found that a thorough impregnation of the fibre could never be attained with latex, as the rubber was merely deposited on the surface. Rubber in a benzene solution, on the other hand, impregnated a cotton fibre almost perfectly. The reason for this was that, "The rubber hydrocarbon contained in the latex is present in the form of an endless number of minute particles whose average diameter is estimated at 1 to 2 *mu*. When we consider that the capillary interstices of the fibrous tissues are considerably smaller than these particles, it follows that the latex particles cannot penetrate into the interior of the thread, but at best the aqueous dispersing medium of the latex is absorbed by the core."

The question which now remains is—why does rubber in a benzene solution impregnate rubber perfectly? The answer of the above two investigators is as follows:—

During the process of vulcanisation rubber exhibits a more or less pronounced flow effect, varying in degree with the physical condition of the rubber. Rubber which has undergone no mechanical treatment before vulcanisation (like rubber latex) exhibits scarcely any flow effect at all. Rubber pre-kneaded by mastication does show it. Similarly, rubber obtained by evaporation of a benzene rubber solution exhibits flow effect to a degree practically equal to that of a strongly masticated raw rubber.

Thus, upon vulcanisation, rubber in the form of a benzene solution, due to its marked flow effect more or less perfectly impregnates a fibrous mass, whereas latex, due to the absence of this flow property, effects a mere external coating.

From a practical standpoint, the writer has observed that there are two factors which aid thorough and uniform impregnation of textile fibres: (1) Presence of an efficient wetting agent in the latex bath, and (2) presence of dispersing agents which will yield a fine dispersion of the compounding ingredients in the latex.

As we well know, many wetting agents have been offered as dispersing agents, and while many of these are effective dispersants, this does not hold true for all wetting agents. This has been shown by the following set of experiments the results of which clearly indicate that some wetting agents actually produce flocculation of suspensions.

In these tests a series of eight mixtures consisting of 5 parts of red iron oxide and 150 parts of water were prepared by stirring the pigment and water together with a glass rod. 0.5 part of six different commercial wetting agents was added to each of these mixtures. Darvan, which is a polymerised organic salt of sulphonic acids of the alkyl aryl type was added to the seventh mixture. It may be sought for in fibres, these effects can usually be obtained by use of rubber latex. Let us take, for example, the case of crease-resistant textiles produced from urea formaldehyde resins. If the more recent foreign patents are examined, it will be found that increased wearability in these fabrics are attained by use of rubber latex. This has been brought out in two following patents:—British Patent No. 486.926 issued to Tootal, Broadhurst, Lee & Co., Ltd., describes textile materials rendered crease-resistant by the presence of synthetic condensation products which have their wearing properties improved by treatment with natural or artificial rubber latex before, during or after the synthetic condensation product treatment. Examples :

A urea-formaldehyde precondensate is mixed with rubber latex and ammonium phosphate. The Textile material is impregnated with this mixture, squeezed, dried and heated to 120° to 130°C. for two to three minutes. The product is claimed to be crease- and wear-resisting.

A later British Patent issued to Botson, Perlmuteer and Raepsalt is very much along the same lines. Here the fabric is first impregnated with rubber latex containing a wetting agent from the alkylated naphthaline sulphonic acid series, dried and treated with a solution containing 5 parts urea, 25 parts 40 per cent. formaldehyde, 2 parts lactic acid and 60 parts water. The fabric is dried and then heated for ten minutes at 150°C.

Two other patents, one illustrating the water-repellency of rubber latex and the other its property of rendering an openly woven textile dustproof and waterproof prove interesting.

In the first a knitted fabric of cellulose acetate is treated with a solution which comprises a dispersion of ammonium stearate in rubber latex at a temperature of 25° to 35°C. The material is removed, hydro-extracted and dried. The ammonium volatilises in drying, leaving the water repellent stearic acid and rubber in the fabric.

In the second development jute fabrics for making bags for the packing of raw cotton and wool are coated on one side with a vulcanisable rubber latex. The purpose of the rubberising is to prevent damage to the contents of the sacks from water, as well as to prevent dirt and dirty goods from penetrating the fabric. The strengthening properties of the latex give longer life and wearability to the sacks by increasing the tensile strength of the fabric.

In the foregoing we have considered the study of two groups of colloidal bodies, rubber latices, and textile fibres from the standpoint of producing a fibre which has been perfectly impregnated by the latex. It is apparent that the molecular aggregates of latex are of such size that they do not permit true impregnation. However, methods have been devised by which the disadvantageous properties of a "rubber surface" may be eliminated.—(*The Rubber Age.*)

ACETIC ACID FROM COCONUT SHELLS.

(The following are extracts from an article in the October 1939 issue of "The Tropical Agriculturist" headed "The Destructive Distillation of Coconut Shells", by Reginald Child, B.Sc., Ph.D. (Lond.), F.I.C., Director of Research, Coconut Research Scheme).

It is the object of the present article to review what is known of the yields and composition of the products from the dry distillation of coconut shells, and thus to provide data upon which may be based consideration of their possible economic development.

The primary products of distillation are *charcoal,* which remains in the retort or oven in which the shells are heated; *pyroligneous liquor* and *settled tar,* which distil over and are condensed in suitable water or air cooled condensers; and *uncondensable gases.*

The course of distillation is somewhat as follows: at the commencement of heating, the first action is to dry out the contained moisture of the shells (about 9-10 per cent.) and the first distillates are mostly condensed water; thereafter the main reactions set in with the formation of large quantities of gas and the liquid distillate contains acetic acid, methyl alcohol and some tar; the reaction becomes exothermic at about 290° C, *i.e.,* continue without the necessity of external heat. When this stage is over, with continued external heating tarry matter predominates in the distillate.

Several studies on shells have been reported and Table I shows the results recorded of the yields of the primary products. Columns 6 and 7 refer to commercial trials carried out in 1934 respectively by Messrs. H. and T. Danks (Netherton), Ltd., and by Messrs. Low Temperature Carbonisation, Ltd., on behalf of Messrs. Lee Hedges & Co., Colombo, and are included by courtesy of the latter firm.

Ramachandran (1938) has described experiments on the effect of adding certain chemicals to the shells before distillation, reporting that zinc and magnesium salts gave an increased yield of pyroligneous liquor, whilst aluminium salts reduce the yield of pyroligneous liquor but slightly increase the yield of settled tar. In view of the considerable variation of the results given by different observers, these statements probably need confirmation. It is possible that shells from different sources behave differently, but it is the writer's opinion that the main causes of variation are (*i*) differences in the moisture content of the shells and (*ii*) lack of standardisation of distillation conditions. Thus the high charcoal figures and low liquor and tar percentages reported by Georgi and Buckley (column 4) probably point to insufficient heating; the low charcoal and high tar figures of the commercial trial by Messrs. Low Temperature Carbonisation, Ltd. (column 7) indicate thorough carbonisation; whilst the figures of the writer (column 5) are known to have been due to good heating of the retort but inefficient condensation of the distillate.

In spite of this variation in the reported results, they are in sufficient accord to show what yields should be obtainable under good conditions of distillation and the general averages (excluding the extreme figures) work out approximately at:—

Charcoal	34 lb.	from 100 lb. of shells.
Pyroligneous Acid	40 lb.	
Settled Tar	6 lb.	
Gas	20 lb.	

Acetic acid under good conditions should reach 12.5 per cent. in the pyroligneous liquor, or 5 per cent. of the weight of the shells. That is to say, since 250–300 million shells weigh about 36 to 45,000 tons, the equivalent of some 2,000 tons of glacial acetic acid is annually burnt off into the air in the manufacture of charcoal in Ceylon.

The annual requirements of the Ceylon rubber industry of acetic and formic acid together do not greatly exceed 500 tons.

The distillate separates into two layers, the top known as "pyroligneous liquor" and the latter as "settled tar". The settled tar does not represent all the tarry substances present, parts of which remain in solution in the pyroligneous acid and are known as "dissolved tar".

Pyroligneous Acid (the word "pyroligneous" simply indicates "derived from wood by a process of heat"), is by no means a simple chemical substance, but a complex mixture of a large number of compounds. The actual composition varies with conditions of distillation and with the raw material used. The principal constituent is, however, acetic acid, and "pyroligneous liquor" or "pyroligneous acid" may be regarded as an impure dilute acetic acid contaminated with a strong, smoky smell. As will be seen from the Table, the acetic acid content may vary between about 7 and about 15 per cent. but with dry shells and satisfactory distillation at least 10 per cent. should be obtained, and if the weaker first distillates be rejected, at least 12.5 per cent.

The other constituent of importance is "wood naphtha," a mixture of methyl alcohol and acetone. The percentage has been reported as 2½–3 per cent. in the liquor, or 1–1.2 per cent. on the original shells. (Wells, 1917; Sudborough, 1920).

Settled Tar:—The division of constituents into those present in pyroligneous liquor and in the settled tar is, of course, only approximate, since any of the main constituents of one may be found in small quantities in the other. The settled tar, for example, contains some acetic acid.

Coconut shells compare very favourably with most wood as raw materials for distillation, particularly in two respects. The moisture content of air-dried shells is low (not more than 10 per cent.), and the yields of acetic acid are extremely good.

Treatment of Pyroligneous Acid.—In the wood distillation industry, pyroligneous acid is usually redistilled to separate it from dissolved tar. The distilled pyroligneous acid is neutralised with lime and partially distilled to recover the "wood naphtha," the latter being then purified by suitable means. The neutralised solution remaining is evaporated to dryness leaving acetate of lime known commercially as "grey acetate."

From "grey acetate", acetic acid is obtained by treatment with sulphuric acid, and purified by suitable rectification.

The latter operations are matters of specialised technique, and it may be said at once that, in the writer's opinion, it would not be practicable to undertake them in Ceylon.

All that could be contemplated is the possible purification of pyroligneous acid to provide a reasonably pure dilute acetic acid of about 10–15 per cent. strength which would be suitable for rubber coagulation; and also, since lime is a local product, the production of a certain amount of "grey acetate." Both of these are technically possible, since they involve fairly simple plant and do not require imported chemicals. The difficulties are not technical but economic.

The writer's experiments using a pyroligneous acid of 9.33 per cent. w/v acid content (as acetic) show that, by the addition of 30 per cent. by weight of crude salt to raise the boiling point, it is possible by simple distillation to effect considerable purification and some concentration. A number of runs showed that the first 5 per cent. approximately of the distillate contained most of the "wood naphtha"; the next 50 per cent. was a colourless distillate averaging 11.1 per cent. w/v acidity as acetic.

It is still, however, by no means pure dilute acetic acid. Besides acetic acid, the redistilled liquor contained some formic acid and dissolved phenols. The former amounted to 0.43 per cent. w/v and the latter (determined by chloroform extraction) to 2.36 per cent. w/v. Furfural was detected qualitatively. The presence of formic acid would not be a disadvantage in rubber coagulation, but coagulation and vulcanisation tests on rubber prepared by the use of the material are necessary to ascertain whether phenols, furfural and other compounds have any deleterious effect.

Further experiments are in progress to see whether better recovery is possible, and the Director, Rubber Research Scheme, has agreed to carry out the necessary test coagulations and vulcanisations.

Reference might be made here to the patent of E.C.R. Marks (1915) which claims "a process for coagulating latex characterised in this that the gases obtained by the destructive distillation of wood, in suitable retorts, or the like, after removal of the tar from the gases, are employed for treating the latex".

It would probably not be worth while in Ceylon attempting to recover methyl alcohol or even crude "wood naphtha". There is no local demand for the product, and the recovery is in any case more difficult in tropical than in temperate climates.

Grey Acetate.—In 1916 (Bull, Imp. Inst. *loc. cit.*), samples of grey acetate were prepared in Ceylon, and the Imperial Institute reported on them as follows:—

"It consisted of a coarse powder, pale grey in colour, and had a tarry odour. Its solution in water was of dark-brown colour.

On analysis the sample gave the following results:—

Moisture	3.50
Calcium acetate	83.60
Sulphates expressed as calcium sulphate	0.60
Carbonates expressed as calcium carbonate ..	0.08
Total ash	32.20
Matter insoluble in water	1.20
Free lime Calcium formate Sulphites	Nil

This sample corresponds in quality with commercial 'grey acetate of lime', which usually contains 80 per cent. of acetate of lime. The amount of tarry matter is not excessive."

At that time grey acetate had increased in price from £8 per ton in July, 1914, to £38 a ton, and inquiries were received from the United Kingdom whether supplies were likely to be available for export from Ceylon. Grey acetate, as mentioned above, is used for the production of glacial acetic acid, and it is also a source of acetone, a solvent employed in the manufacture of cordite and for other purposes.

TABLE I.—*Yields of Primary Products from Dry Distillation of Coconut Shells. (Percentage by Weight).*

	Bull. Imp. Inst. (1916)	Wells (1917)	Sudborough (1920)	Georgi (1920)	C. R. S. (1934)	Danks & Co. (1934)	L. T. C. Ltd. (1934)	Ramachandran (1938)	
	1	2	3	4	5	6	7	8	9
Charcoal ..	..	32·5	38·3	49·0	30·0	40·6	29·2	37·2	35·1
Pyroligneous acid	..	41·3 3·2	35·4	29·9*	38·9	37·5	41·3	39·4	41·0
Tar ..	..	6·9	6·3	2·9*	4·6		10·7	5·4	7·2
Loss as Gas ..	..	16·2	20·0	18·2	26·5	21·9	16·4 (measured)	18·0	16·7
Acetic acid % in Pyroligneous acid	8·12	..	..	15·8	9·33	..	..	14·0	7·3
Acetic acid % on shells ..	..	6·3	6·9	4·66	3·63	..	..	5·5	3·0
Source of shells ..	(Ceylon)	(Philippine Islands)	(S. India)	(Malaya)	(Ceylon)	(Ceylon)	(Ceylon)	(Bangalore)	(Trivandrum)

* Calculated from values given on basis of Sp. Gr. of pyroligneous acid 1·04 and tar 1·1.

Cf. Also A. I. de Leon and R. O. R. Royes. "Utilisation of some Agricultural Waste Products. I. Destructive Distillation of Coconut Shells, Coconut Husks, Coconut Rachises and Petioles and Rixe Hulls at 400°." *Univ. Philippines Natural and Applied Sci. Bull.*, 1935, 4, 325–331.

Both Wells (1917) and Sudborough (1920) discuss the economic possibilities in their respective countries, the former giving a comprehensive list of questions which are important factors in plans for a wood distillation industry.

The chief difficulty in any country is the collection at a central factory of sufficient shells for distillation. It seems clear that any plan to undertake shell distillation would only be possible in cases where there is already some centralisation of nuts for copra or desiccated coconut manufacture with the exception that it might be possible to modify charcoal manufacture so as to recover crude pyroligneous acid which might be collected for re-distillation at a central place. There are in Ceylon copra manufacturers and desiccated coconut mills capable of handling as many as 15 million nuts a year. This number of shells—some 2,300 tons or about 7 tons per working day—would suffice to keep running a fair-sized installation, using a still of about 30 ft. x 6 ft. diam. The shells in such factories are normally used for fuel directly, or burned to charcoal for use in gas engines.

Technically, as has been shown, coconut shells have definite advantages over most ordinary woods for distillation. A favourable feature in Ceylon is the existence of a considerable market for shell charcoal.

It is hoped that further information will accrue from semi-commercial trials projected by the Coconut Research Scheme. In the meantime, this article may be concluded by the writer's opinion that the development of any such industry as wood distillation would not be possible in Ceylon as an isolated project in normal times. It could only be considered in relation to other industrial development.

Interest only attaches to the subject at the present time in view of the possibility of it becoming necessary to meet war-time shortages or inflated prices of commodities essential to existing industries. It may be that no long-continued shortage of acetic acid or long period of high prices will occur, but it is obviously desirable to be prepared to meet such possible contingencies.

SUMMARY.

(*i*) Destructive distillation of coconut shells may be expected to give per 100 lb. shells, 34 lb. charcoal, 40 lb. pyroligneous acid (of up to 12.5 per cent. acetic acid content), 6 lb. of tar and 20 lb. of gas.

(*ii*) 250 to 300 million coconut shells or about 40,000 tons are burned annually in Ceylon to produce about 13,600 tons of charcoal, without attempts to recover by-products. These would amount to about 16,000 tons of pyroligneous acid (equivalent to 2,000 tons acetic acid) and 2,400 tons of tar. The local rubber industry's requirements of acetic and formic acids do not exceed 500 tons annually.

(*iii*) The production of finished chemical products such as glacial acetic acid (99 per cent) and methyl alcohol cannot be contemplated in Ceylon. The most that could be contemplated is the production of a purified pyroligneous acid for rubber coagulation, and possibly of grey acetate for export. These are believed to be technically possible.

(*iv*) The chief difficulties relate to collection and transport of raw material, and the centralisation of charcoal production. The chief advantages are the existence of a market for charcoal and, if of sufficiently good quality, for acetic acid, and the fact that shells, by reason of their low moisture content and high acetic acid yield, are particularly suited for distillation.

(*v*) The tar contains carbolic acid and creosote. It may be possible to make some use of this locally, but further experimental work is needed.

CONVEYOR BELT AT GRAND COULEE DAM.

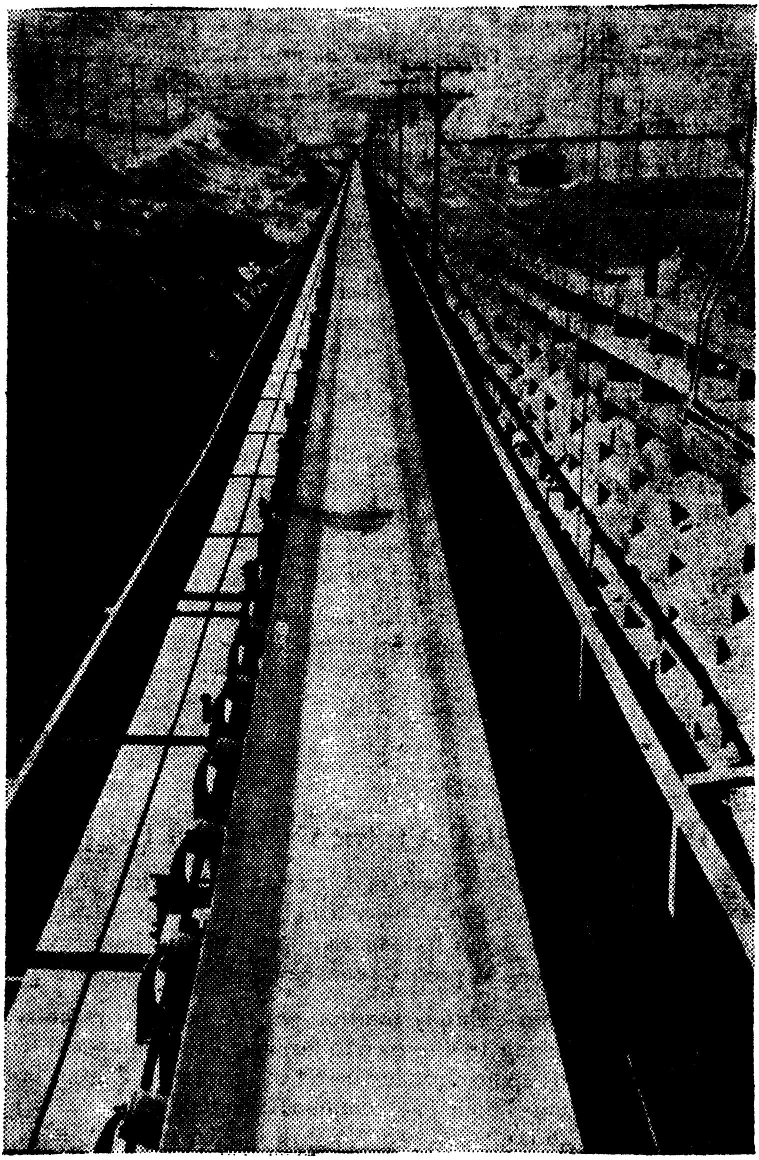
To transport 2,000 tons per hour of aggregate, the world's largest conveyor belt has been installed at the Grand Coulee dam. Built by Goodyear, the gigantic belt operates on centres of 4,850 feet, measuring 9,700 feet long, approximately twice the length of the longest previous conveyor belt ever employed.

Of 48-inch width and eight-ply construction, the belt was manufactured in eight separate pieces weighing 10 tons each to facilitate its handling and transportation, and shipped in rolls approximately 10 feet in diameter. During installation the sections were vulcanised into one continuous, endless belt.

A veritable "rubber railway", the completed belt required 120 bales of cotton and 50 tons of rubber for its manufacture. In action, the belt conveys coarse stone up to six inches in size, which will comprise the aggregate for the huge dam that will ultimately span the Columbia River in the state of Washington, U.S.A., a distance of approximately one mile from the source to dam site.

Moving at a speed of 450 feet per minute, the belt will carry the stone for an 11-minute ride. Supplementing the main conveyor are some additional 20,000 feet of vari-sized belting used to gather, classify, store, recover, and transport the aggregate through the screening and washing plant located at the source.

In summer, when bearing friction is at minimum, approximately 90 horse-power are required to put the empty belt in motion. Once the belt is fully loaded, approximately 50 horse-power are required to hold it back to the desired speed of 450 feet per minute. The stone is conveyed downhill.



In winter, approximately 125 horse-power will be required to start the belt when unloaded, and 50 horse-power will be required to keep it moving, instead of being used as a retarding force as is the case in summer operation.

Successful operation of this extraordinary conveyor in one of the biggest building projects ever undertaken by man demonstrates conclusively the practicability of long distance conveyor operations.

MARKET REPORT AND PRICES

The Calcutta Market.

(Extracts from the Calcutta Tea Brokers' Association Reports).

Sale No. 27 was held on 18th and 19th December, 1939.

There was a good general demand. Wiry leaf grades and fannings were dearer, while good liquoring teas, tippy teas, and clean common sorts were fully firm. Medium brokens were about three pies per lb. lower however and some irregularity occurred among short leaf Orange Pekoes and Pekoes. Darjeelings received little support and were difficult to sell.

DESCRIPTION	Season 1939-40				Average on same date			
	Sale No. 27		Average to date		In 1938		In 1937	
	As.	p.	As.	p.	As.	p.	As.	p.
With Export Rights	12	7	11	4	9	4	10	6
For Internal Consumption :—								
Leaf Teas	5	2	4	7	3	11	4	3
Dusts	4	9	4	4	4	4	5	0
Green Teas	6	9	5	6	5	6	..	

RUBBER.—London Rubber on December 29, 1939, 11 11/16d.

The Colombo Market.

(Issued by the Colombo Brokers' Association).

Average prices obtained (in cents.)

SOUTH INDIAN TEA.

	Sales on Dec. 12 & 19, 1939
Akkamalai	96
Dunsandle	1·10
Glen Morgan	92
Kadalaar .. .	77
Kairbetta	82
Kanniamallay	90/92
Havukal	67
Karamalai	1·01
Kardoora	76
Kurchermulla	63
Lockhart	89
Mailoor	69
Malakiparai	77
Manalaroo	76
Mlamallay	70
Nagamallay	72

SOUTH INDIAN TEA—*Contd.*

	Sales on Dec. 12 & 19, 1939
Nonsuch	1·13
Parkside	1·09
Singara	1·11
Upper Surianalle	78
Vagavurrai	93
Wakefield	89
Wentworth	75

RUBBER.

	Sales on Dec. 14 & 21, 1939
Ribbed Smoked Sheet ..	57½ —
Contract Crépe ..	57½ —
Mottled Brown Latex Crépe	52½ to 54
Brown Scrap Crépe ..	52¼ to 52½

The *Madras* Market.

Current on 4th January, 1940.

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

Owing to the Christmas holidays the local stock exchange has been open for only two days since our last report was written. Generally speaking, markets have opened steady. The undertone remains dull and the accumulation of orders on brokers' books has not proved so large as was anticipated. It must necessarily take markets a few days to get into their stride and more activity can be expected in coming weeks.

Rubber.—The price of Spot Rubber remains steady at 11–11/16*d.* The latest price available to us for uncouponed rubber in India is Rs. 34 and rubber quota Rs. 17 per 100 lbs. Cochin-Malabars opened steady at Rs. 7 while Thirumbadis changed hands in small lots at Rs. 1/15 as. with sellers over at the close. Malankaras were easier with sellers at Rs. 42 while Tropical Plantations had small transactions at Rs. 17 to Rs. 17/4 as. Among the cheaper priced issue, Be Be Rubbers were in demand at up to Rs. 3/4 as. cum the dividend of 4 annas per share while Midlands changed hands at Rs. 5/4 as. Coorgs were firm at Rs. 28/12 as. and Kalpettas at Rs. 18/12 as.

Teas.—There is no change of note since our last report a fortnight ago. Periakaramalais were easier with sellers at Rs. 18 but Peermades advanced to Rs. 25/12 as., buyers. Chembra Peaks were featureless at Rs. 3/1 an., while Devasholas had one marking at Rs. 7/10 as. United Nilgiris were firm at Rs. 105 cum the dividend of Rs. 5.

FORTNIGHTLY RAINFALL STATEMENT.

December 10, 1939 *to December* 23, 1939—(*Inclusive*).

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty	N.R.	N.R.	106·66	..	25. Kotagiri ..	0·29	..	56·08	56·37
3. Kallar B'dge	1·77	..	160·41	162·18	26. Ootacamund ..	..	..	55·71	55·71
4. Koney ..	0·32	..	121·97	122·29	27. Yercaud ..	0·05	..	71·87	71·92
8. Twyford ..	0·31	..	242·04	242·35	30. Devarshola				
9. Pettimudi ..	..	..	328·51	328·51	T.E.S. ..	..	..	77.58	77·58
10. Kalaar ..	..	..	236·44	236·44	31. CALICUT ..	..	..	115·22	115·22
11. Chittavurrai	..	..	41·46	41·46	32. Kuttiyadi ..	0·22	..	191·51	191·73
12. BODI'KANUR	..	..	20·17	20·17	33. Vayitri ..	..	..	151·16	151·16
13. COCHIN ..	0·10	..	131·11	131·21	34. Manantoddi ..	..	..	83·97	83·97
14. Mooply ..	0·39	..	130·23	130·62	35. Bilgiris ..	0·18	..	66·22	66·40
15. Pachaimallai	..	..	125·74	125·74	38. Pollibetta ..	..	..	61·18	61·18
16. Mudis ..	0·70	..	178·89	179·59	39. Coovercolly ..	0·15	..	74·07	74·22
17. POLLACHI	..	..	33·06	33·06					
18. Ropeway					41. Kadamane ..	..	..	265·52	265·52
Waterfall	0·10	..	96·91	97·01	43. Merthisub'gey	..	..	99·02	99·02
21. Kerala Estate	0·13	..	148·50	148·63	45. Balehonnur ..	..	..	88·54	88·54
22. Naduvattam	..	..	118·33	118·33	46. MANGALORE ..	..	..	116·41	116·41
24. Coonoor ..	1·79	..	46·81	48·60	47. MADRAS ..	0.64	..	31·80	32·44

N.R.=No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL.

A Press Communique dated 13th January has been issued from New Delhi by the Indian Branch of the International Labour Office with reference to the position created by the war. The Communique emphasises that the I.L.O. has adapted itself to the changed conditions and that so far from suspending its work it is functioning to-day as well as ever and is capable of meeting the extraordinary demands that may be made on it under war-time conditions. We quote the Communique in full as follows:—

As early as last February, the Governing Body had enunciated the principle that the I.L.O. should continue its work even in the ultimate event of war and took various steps to ensure its practical application, and because of the wise provisions thus taken, the Organisation was able to carry on despite the mobilisation of part of its staff and other difficulties.

The 25th session of the I.L. Conference was held according to schedule in June. Governments, employers and workers, under the menace of imminent hostilities, decided almost unanimously to postpone the consideration of the questions of the reduction of hours of work submitted to them, while reserving action on them for a future period when the world returns to a peace-time economy. On the other hand, in dealing with the other items on its agenda less affected by exceptional circumstances—road transport, contracts of employment of indigenous workers, the protection of migrant workers, and technical and vocational education and apprenticeship—the Conference adopted four draft Conventions and six Recommendations.

The session was particularly noteworthy because of the striking evidence it supplied of the loyalty of the States Members. Forty-six were represented, in spite of the political crisis. Some were countries which, like the United States, never belonged to the League of Nations, or which, like Brazil, Chile, Venezuela, Peru and Hungary have either left the League or have given notice to do so but have remained Members of the I.L.O. During the general discussion on Director Winant's report, sixty speakers representing Governments, employers and workers —from every Continent— maintained energetically that the Organisation must continue its services to the world whatever the circumstances.

The "Emergency Committee," invested by the Governing Body with its powers, met in September and October. On the usual date, Mr. Carter Goodrich, U. S. Government Representative, was appointed Chairman of the Governing Body; on 21st November, the date previously fixed, the second Conference of the American States which are Members of the Organisation met at Havana, and Government, employers' and workers' delegates from sixteen countries took part; on 23rd November a meeting of members of the Permanent Agricultural Committee from American countries opened in the same city. The Governing Body itself will meet as usual at the end of the current month, and it has also been decided to convene the annual session of the I. L. Conference at Geneva in 1940.

Since the outbreak of the war, the I.L.O. has redoubled its efforts to meet the various needs of its States Members. More than forty of them, twenty of which are actually European, are taking no part in hostilities. As for the belligerents, they are faced with great economic and social problems the importance of which cannot be overestimated. On these and other social questions directly due to, or aggravated by, the war, the I.L.O. continues to collect information systematically, so as to be in a position to answer requests from Governments and workers' and employers' organisations which require to know the action taken in other countries to adapt social legislation and conditions of work to war-time requirements.

The year was notable in other respects also. For the first time, representatives of Governments, employers and workers in the rail transport industry met at the I.L.O. in March to discuss conditions of work in rail transport. Further, in addition to the usual reports published for the Conference, the I.L.O. issued several important studies, including "Industrial Labour in India," of particular interest to this country.

The number of ratifications of I.L. Conventions increased from 837 on 1st January to 866 on 20th December. Of twenty-nine ratifications registered during the year, twenty-two were effected before 1st September and seven since the opening of hostilities.

TAILPIECE.

The humour of pure nonsense, as exemplified at its best by Edward Lear, has its attractions even at lower levels than that, and we are glad to note that the new "Magazine Digest" (India; Taj Mahal Hotel, Bombay) has given it due attention in its selections. We liked a list of suggestions for new inventions:—

"Salt shakers without holes, for not putting salt on stuff you don't like to put salt on.

"An alarm clock with half a bell on it, so when two people are rooming together, it just wakes one of them.

"Red, green, yellow and blue sleeping tablets which you take before retiring so you'll dream in Technicolor.

"A piano with stationary keys, for people who would rather play the violin."

There is quoted also George Formby's fatuous story of the two mind-readers who met one morning. One looked fixedly at the other for a moment, then said: "You're all right; how am I?"

COFFEE BORER.

Congratulations to the "Planters' Chronicle" and thanks to Dr. W. W. Mayne for the very interesting article on Borer in Annam lately published in two issues of the "Chronicle."

If I venture to comment on it, it is mostly on the strength of the acquaintance I made with a French Coffee Planter of Annam, on a voyage home, some years ago.

Annam is that part of French Cochin-China which adjoins Siam on the east —as shown by the graphs published, the temperature of Phu-Qui, the zone studied, does not rise as high as in the Mysore Malnad, nor does it fall as low. The rainfall is lower and approximates to that of South Coorg. In fact there is more than one point of similarity between the two countries. Annam is a coastal zone, and so is Coorg practically and their coffee zones enjoy a sub-maritime climate with greater atmospheric moisture. Both suffer more severely from borer than other coffee regions farther from the sea.

Borer is contemporaneous with coffee planting in Annam. According to my friend, as early as 25 years ago, the clump system of planting was adopted there as a precautionary measure against borer, not as a protection but to minimise the borer, one stem being cut down as soon as borer damage appeared, the rest of the clump extending its primaries into the vacancy thus caused. Old records show that in Mysore borer is not an enemy of recent origin. Does it not mean that the host of the borer is in the jungle, and though not much success has attended work for its identification and ultimate eradication in its native haunts, we should be well advised to look more in that direction.

Dr. Mayne thinks that dual stems on the same root do not grow to the same size as single stems. In the Shevaroys some 30 years ago, a coffee estate was renovated by stumping the old trees and allowing multiple stems to grow on the same root, they reached quite normal size and the owner used to put down his heavy crops to the multiple stems.

Manuring in Phu-Qui is said to be complete manure and fertilisers. By the former must be meant cattle manure and compost. It will interest planters to know that in Annam when land was granted for coffee planting by Government, an equal acreage of grazing land was granted for manurial purposes, and could not be put under cultivation. The rather low cost of manure application at Phu-Qui may be explained by the fact that the grazing lands surround the Estate, and with stables conveniently placed, the distance to which the manure is transported is much reduced.

I think the most significant part of the article lies in the conclusion which stresses the importance of maintaining the trees in as high a state of health as possible, to avoid borer damage. We cannot expect full health and vigour with corresponding power of resistance in aged coffee trees. We have overlooked it too long in Mysore where very seldom a rational plan of coffee rejuvenation has been adopted. Clearings of say ten years of age suffer very little from borer and can be maintained in good condition easily, they suffer not much from *Hemileia* either. I think the time is come to renovate gradually most of our estates and thus prevent much borer damage.

E. S.

U. S. TEA AND COFFEE TRADE AND WAR.

The outbreak of war in Europe found the tea and coffee trades in this country prepared to face calmly the prospect of a long drawn-out struggle. The consensus of opinion seems to be that coffee prices in America will not be seriously affected by the war; that such changes as are inevitable owing to higher shipping costs will be easily absorbed; and that the loss of European markets (felt especially by the mild producing countries) may lead to easier prices for these grades in the American market.

Support for a hopeful outlook was seen in the fact that coffee prices in the United States have for a long period been too low; and that consequently any upswing could be justifiably passed on to the consumer without resistance. Fears that this country might be caught short of stocks owing to the scarcity of available bottoms from producing countries were discounted by the fact that for several years the trade here has operated on a hand-to-mouth basis without any ensuing fluctuation in prices.

It is a fact, however, that an abnormal flow of spot coffees from this market to Europe followed immediately upon the opening of hostilities. The Scandinavian countries, Italy and France were all heavy buyers; and there was a report that Russia was actively interested. The consequences are yet to be seen. If American stocks are drained to provide neutrals with extraordinary supplies, domestic markets may yet feel the pinch. So far, this eventuality is sheer conjecture; and with sufficient tonnage operating from South and Central America the outlook would indicate considerable prosperity if the Eastern seaboard should become the base of shipments to belligerent Europe.

The shipping situation, with its attendant factors of increased freight rates and war-risk insurance, is one of the major uncertainties to-day. At the time of going to press it is reported that the United States Government, as a sign of practical co-operation with its South American neighbours, has agreed to the transfer of fourteen cargo vessels to the Brazilian flag to provide independent shipping facilities for that country. The deal, though officially unconfirmed, will probably be definitely announced within a few days. The added tonnage will relieve any difficulties as to the movement of coffee.

From New Orleans comes the report that the shipping strain has already been felt. Only two weeks after the outbreak of hostilities, all available tonnage from Brazil was said to have been fully committed for October; and later cables advised that tonnage for the first half of November had also been sold out.

Increased shipping rates on commodities from South America are also of vital importance to the coffee trade. On September 19 the U.S.-River Plate-Brazil Conference announced an increase of rates averaging 25% on tariff or non-contract items. The Moore-McCormack Lines immediately challenged the validity of the order; and the matter is now before the Maritime Commission for determination.

In the future market the war brought an immediate upward spurt, which was discounted somewhat during the month by alternate flurries of buying and profit-taking. On the "D" contract, a high of 6.82 was recorded for September options, and 6.77 for December. By September 20 these figures had receded to 6.50. Opinion in informed circles was that there would be no appreciable recession in the option market.

Statistically the world position at the outbreak of war was favourable to producing countries. Comparison with the 1914 position is of course inevitable. At that time huge stocks were carried in consuming countries; and especially in

Hamburg and Antwerp the ensuing loss to Brazil by confiscation was a real disaster. The present crisis found Europe holding only 2,700,000 bags as against 8,000,000 in 1914. United States stocks on September 1 were estimated at 1½ million bags, as against 2 million in 1914. If trade with neutral countries can be maintained in the face of the submarine menace, the producing countries may find their exports only moderately curtailed while prices reach higher levels. In substantiation of this hopeful note is the fact that European coffee consumption has increased tremendously since the first war.

With respect to tea, the effects of the war were immediately felt. Late in September cables from London announced the action of the British Government in requisitioning tea stocks. Information received here was that 50,000,000 pounds of Ceylon tea and 130,000,000 pounds of India tea had been requisitioned for delivery before the end of the year.

This action of the British Government had been anticipated, but with stocks in the United States at a low ebb, the effects were acutely felt. It is feared that little tea from India or Ceylon, other than what is now afloat, will reach this country; while any considerable volume of exports in London is dubious. The prices of Javas and Sumatras soared immediately; with similar increases in quotations for other growths.—(*T. & C. Trade Journal*).

WAR NOT TO HINDER U. S. TEA CAMPAIGN.

The present million-dollar-a-year newspaper and magazine advertising and promotional campaign of the Tea Bureau, Inc., will be continued as originally scheduled, and there will be no interruption or changes because of the European War, it was formally announced on September 6 by Benjamin Wood, Managing Director.

"The United States has ample stocks of black tea, which accounts for more than 80% of our national consumption," Mr. Wood said, "and there is no reason to anticipate a shortage of additional supply.

"Both consumption and imports have moved sharply upward this year. During the first eight months imports of all teas exceeded 62,000,000 pounds, a gain of 27% over the same period last year. Black teas now are running almost 30% over 1938 and about 20% above the average of the past five years."

The best data available indicate that present stocks of all teas are sufficient for at least four to five months demand, Mr. Wood said. No slackening in imports is foreseen, because most of the past shipment of tea to America has been in United States vessels and those of other neutral nations.—(*T. & C. Trade Journal*).

JAPAN'S TEA EXPORTS.

Japan's tea exports for the first quarter of the crop year (May 1 to July 31) amounted to 9,877,324 lbs., as against 6,169,016 lbs. for the same period last year, a gain of 35%. Green tea exports totalled 8,713,087 lbs., and black tea 1,164,237 lbs. The United States took nearly 4,000,000 lbs. of green and 70,000 lbs. of black; showing substantial gains over a year ago. An analysis of the figures furnished by the Tea Refiners' Guild shows that Japan tea is entering Russia through China and Manchouko. China's imports of Japan tea during the three-month period have soared from 25,000 lbs. in 1937 to over 3,000,000 lbs. in 1939. Manchouko which took little over 100,000 lbs. two years ago, imported over 1,000,000 lbs. in the three-month period this year.—(*T. & C. Trade Journal*).

WAR-TIME TEA MANURING.

The following is an address given by Mr. P. H. Carpenter, Director, Indian Tea Association Scientific Department, Tocklai, at the Annual General Meeting of the Assam Branch of the Indian Tea Association on 11th November 1939.

We have passed from peace to war-time conditions. So far this has made no great difference to us in Assam: the tea season was well advanced and no great change in crop could have been effected even if it had been required but no very heavy demand has been made. It is, however, possible that increased demands will be made depending no doubt to a considerable extent on the control our navy and air force can exert over enemy submarines. Even with such losses reduced to a minimum there is likely to be some additional requirements since tea is a necessity to the personnel of our fighting forces and under active service conditions there is not the same strict economy practised that there is in peace time. Increasing the amount of tea of necessity means working the tea bushes harder and feeding them better if they are to be maintained in good condition. It is estimated that for every million pounds of extra crop from North East India an additional 65 tons nitrogen equivalent to 300 tons of Sulphate of Ammonia is required. An increase of 5% in tea crop of North East India would require approximately an additional 1,000 tons of nitrogen which is equivalent approximately to 5,000 tons of Sulphate of Ammonia. If this nitrogen had to be supplied by 5% oilcake and allowing this nitrogen to have only 75% the efficiency of that in Sulphate of Ammonia then nearly 8 lac maunds of oilcake would be required.

A great deal of the Sulphate of Ammonia used by tea in North East India is made in this country but there is much used in other parts of India that has to be imported. At present the export of Sulphate of Ammonia has been prohibited from Great Britain and owing to the dollar-rupee exchange rate it can only be brought from U.S.A. at an excessive price. Whilst it is hoped and even expected that some arrangement will be made to supply Tea with the required amount yet it is as well to be prepared with alternative schemes.

Organic manures such as Oilcake, Dried blood, Animal meal and Fish meal are made in this country but the quantity is insufficient to supply the needs of India. In addition these measures are less efficient for tea and are very costly even at pre-war prices. With the price of tea fixed by Government at a comparatively low level it is not possible to pay excessive prices for manures. It is necessary therefore to consider what other courses are open. First of all we recommend the efficient and economic use of the manure available.

Much can be done by paying attention to the following points:—

(1) Manuring should be confined to good tea in full plucking where shade is absent or sparse.

(2) Heavily shaded tea makes little or no use of nitrogenous manures whilst moderately shaded tea gives much less response to added nitrogen, than does unshaded tea.

(3) No nitrogenous manures should be used on areas growing a leguminous crop.

(4) Heavy to medium pruned tea should not be manured in the season following the pruning.

(5) Very old or diseased tea which is incapable of fully responding, should be given only Boga medeloa and shade trees.

(6) Areas in which shade trees are already established should have the shade trees very carefully maintained and any diseased tree should have immediate

attention either to cut out the disease or remove the tree so that infection is not spread. A new tree should at once be infilled so as to maintain the shade.

The planting of shade trees in unshaded areas will at first and for possibly three years lower the tea crop for it is not until leaf-fall has accumulated in the soil that a benefit will be noticed; a gain may be expected after five years. This will, however, depend on the amount of available nitrogen in the soil occurring either naturally or by the addition of manures. The greater the amount of nitrogen available the longer will be the period before a gain from the shade trees occurs. I do not wish to discourage the planting of shade trees but to point out that it is a provision for the future and will not help in the immediate production of an increase in crop.

In the same way the growing of Boga medeloa at first will cause a loss in tea crop but its continued use will give a gain.

The use of short-term green crops such as Cowpeas is not recommended since experiments at Tocklai have indicated no gain to the tea.

Eupatorium (*i.e.*, Giant ageratum) growing outside the tea area can be used with advantage. An experiment at Tocklai has shown that the application of 3 tons of sun-dried cuttings containing about 54 lbs. nitrogen gave an effect equal to that from 30 lbs. nitrogen in the form of 1½ cwt. Calcium cyanamide and which cost about Rs. 10-8-0 applied. We therefore estimate the value of 1 ton of fresh Eupatorium cuttings at about Rs. 2 inclusive of cutting, carriage and spreading which is about the same value as that of a ton of good humus compost or average cattle manure. The cutting of the Eupatorium was done in late May. Leaves are largely dropped in the cold weather and the plants are not leafy enough to be of full value till May. The wood has little value as a manure but its presence in the soil does not interfere with the rapid action of the nitrogen in the leaves.

The present conditions provide no justification for the preparation of large quantities of vegetable compost for use as a general manure.

Without increasing manuring crop can be increased at any rate for a short while by coarser plucking but with the plucking of the third leaf the quality of the final tea will be lowered and the required standard will not be maintained. Coarse plucking then is not likely to be a satisfactory means for providing increased crop.

At the present time there is a certain amount of tea not in full plucking but which if crop demands increase, will be brought into full production. It is easy to be misled into thinking that this can be done without any additional expenditure on manuring. Without any manuring the land can support a crop of tea of about 5–6 maunds per acre and so long as no more is required from an area the addition of manure is unnecessary. Areas fully shaded by Sau trees are capable of yielding at least 8 mds. per acre of tea without any other manuring. If larger crops are required addition of manures may become necessary, if the tea bushes are to be maintained in good condition.

TEA QUOTA PRICES.

The Quota prices ruling in South India on 17th January were:—

Tea Export Quota	6 annas 6 pies per lb. (approx.).
Internal Market Rights ..	2 pies per lb.

In Calcutta Export Quota was quoted nominally at 6 annas 11 pies per lb. Internal Consumption Quota was quoted at 2–2½ pies per lb.

INDIVIDUAL TREE RECORDING FOR YIELD AND QUALITY.

By M. Halcrow, Scott Agricultural Laboratories.

One of the most important aspects of the work of the coffee team is undoubtedly the individual tree recording. In few words, the search is for high yield, good quality and suitability to particular localities. The last point is often the most important criterion especially in districts where leaf disease and coffee berry disease are the limiting factors and already some success has been achieved in this connection. Most of the individual tree selection work, however, is being done in the main coffee area by the Scott Laboratories staff and most of it was begun in 1937 when the coffee team came into being under the leadership of Mr. G. J. L. Burton, Ag. Deputy Director of Agriculture, and Mr. Stuart Gillett.

Good work in the past by men with a flair for selection like Mr. P. J. H. Coldham of Kiambu, and Mr. A. D. le Poer Trench, formerly Senior Coffee Officer, has given the industry several excellent strains of selected planting material, but even the best plantations exhibit a surprising variety of types, the majority of which are well known to most planters and not a few are generally recognised to be poor yielders. At the same time, planters who have been in the country for any length of time, can usually associate certain other types with heavy cropping, and most planters do, in fact, carry out seed selection from their best trees. Such selections are usually based on observations only, which are no doubt accurate enough as far as they go, but it does not follow that because a tree gives more than its neighbours its progeny will necessarily be equally good. Tree selection work requires more than simply picking out the highest yielders and most resistant types.

The methods of selection employed by the coffee team are designed to find the best trees in the shortest time while at the same time extending the scope of the search. The most likely trees are marked and usually fences are put round them to make sure that they are not picked with the bulk of the plantation. The trees are then picked individually as the crop ripens and the cherry weights recorded. Every picking from each of the trees is pulped, fermented and dried separately in equipment specially designed for the purpose. The parchment coffee is then stored in bags bearing the numbers of the trees and filed till the end of the season, when the weights of clean coffee per tree are obtained and the individual variations in quality, including liquoring, are assessed. For special purposes, whole blocks, sometimes of several hundred trees, are recorded individually right through to clean weight, or, if the number of trees is very high—say 500 or more—the cherry weights only are recorded. For this work the assistance of trained native recorders is required; there are nine or ten stationed in various parts of the coffee area. The total number of trees recorded individually is at present in excess of 4,000 and the number of samples of parchment hulled, weighed and analysed for quality at the Scott Laboratories during 1938 was 2,400. Some idea of the amount of work involved will be gauged when it is remembered that as many as 12 to 14 pickings are required per tree during the ripening season and each picking is of course prepared separately.

Since the majority of coffee trees in Kenya bear heavy crops only every second or third year, it is clear that there is a minimum period of recording necessary before any reliable measure of a tree's average yielding ability can be obtained. A period of five to six years can be taken as the minimum, though tentative selections can often be made sooner. Indeed, the policy of the coffee team is to make a preliminary short list of the trees that appear best on a 2 or 3 years average, and to start testing them as soon as possible. The reason for this is that it takes at least five years to prove whether or not the high yield of a particular tree is really genetic and not simply due to its having more favourable growing conditions than its neighbours. It is necessary, therefore, for a selected tree to be tried out under controlled conditions alongside the other selected high yielders. This is best done by means of rooted cuttings planted out in a uniform situation and in accordance with the usual methods of modern field experimentation. Alternatively, scion material can be taken from the selected trees and used for grafting at random, on suckers specially allowed to grow in a suitable block of established coffee. Both of these methods are used in Kenya, though the latter is preferred because the technique is simple and it is possible to start taking yields of grafted material within two to three years from grafting. The seedling method of testing selected trees is not used to any extent on account of the large area of nursery space required, the long time required to get results and the possibility of considerable variation in spite of selfing. Admittedly the grafting method still remains to be thoroughly evaluated, in so far as we do not yet know to what extent the root-stock influences the scion and *vice versa.* As far as we have been able to judge, the presence of the actual union does not appear to have any adverse effect on the properties of the scion, such as, for instance, its ability to withstand drought.

The results of our individual tree recording to date, have borne out much of what has been observed by Gilbert and his co-workers at Lyamungu in Tanganyika. The number of trees capable of averaging more than 20 cwts. of clean coffee per acre (for the purpose of discussion it is convenient to convert the weight per tree at a particular spacing to cwts. per acre) is likely to be less than one per cent. of all the trees under observation, and the number capable of averaging over 15 cwts. per acre under 5 per cent. Considerable variation has been observed in the shape and size of the beans between individual trees but as yet no striking variation in liquor has been obtained.

It is still too early to attempt to elaborate the results of recording in Kenya, but an example of the kind of data obtained from recording blocks of individual trees is given below, in the forms of frequency distributions, using the rate of bearing in cwts. per acre as the class interval, *i.e.*, the individual tree records have been converted into cwt. of clean coffee per acre. The recorded blocks are all on well managed estates showing a high standard for each district, except for the Kiambu block where the recorded period was preceded by exceptionally high yields so that the average yield shown is below the average for the Kiambu district.

In general, the table illustrates readily the propensity for biennial bearing in all areas. The Ruiru block, however, is of particular interest in this connection, in that the frequency curves show two modes in each of the years 1937 and 1938 which average 10.02 and 10.88 cwt. per acre respectively, while the frequency curve of the average yields over the two-year period shows only one mode at the average 10.45 cwt. per acre. This would appear to indicate a high degree of individual pruning, together with almost ideal growing conditions.

There is, of course, a great variation between the individual tree yields in any one year but this tends to disappear when yields are averaged over the two years. This is, in effect, merely an illustration of biennial bearing but at the same time it brings out a point which is clearly reflected in the data namely that constitutionally, the majority of the trees are quite capable of carrying heavy crops given the chance. To elaborate the point let us consider favourably situated and well managed estates such as the Kabete, Ruiru and Thika blocks shown in the table. If the uneconomic trees are those averaging less than about 5–6 cwt. per acre per annum, it appears that the number of trees in this category is less than ten per cent. An examination of all such trees in the field, brings out the fact that nearly all supplies, *i.e.*, trees planted in gaps subsequent to the establishment of the plantations, are in this category and it is reasonable to assume that circumstances other than their genetic constitution are responsible. It follows therefore that the number of real "passenger" trees is considerably less than ten per cent., which is a very much lower percentage than one usually hears mentioned in this connection. Too much must not be read into these preliminary figures: it is sufficient to note the indications therein, and to make the obvious inference that individual tree selection must not be looked to as a substitute for culture and cultivation.

The value of high yielding selections as a means of increasing yields is still under investigation in Kenya and we are not yet in a position to say definitely one way or the other. Results in Java with robusta coffee, however, have been successful and there seems good reason to believe that in Kenya, particularly in the less favourably situated areas where maximum yields possible with improved cultural methods have been reached, that further increases will be possible by using material of proved ability and high quality.

Frequency distribution of individual tree yields in Cwts. of clean coffee per acre.

Rate.	9′ × 9′			10′ × 10′			10′ × 10′			10′ × 10′			9′ × 9′ **Multi.**		
Cwt. per	*Kabete*			*Kiambu*			*Ruiru*			*Thika*			*Donyo* ***Sabuk***		
acre.	1937	1938	Mean	1937	1938	Mean	1937	1938	Mean	1937	1938	Mean	1937	1938	**Mean**
0 ..	0	12	0	6	3	0	46	0	0	1	0	0	20	0	0
0– 1 ..	0	8	0	9	3	1	100	7	2	1	0	0	8	4	3
1– 2 ..	1	19	1	14	3	3	35	13	5	8	2	0	10	4	4
2– 3 ..	0	15	0	14	4	7	21	27	5	10	0	2	8	8	8
3– 4 ..	0	7	1	10	10	5	7	32	9	10	0	2	3	9	7
4– 5 ..	2	5	5	9	5	10	9	31	5	12	3	4	3	12	7
5– 6 ..	0	5	6	15	9	12	8	38	7	9	5	5	4	5	12
6– 7 ..	0	2	8	9	5	16	9	30	20	15	6	12	5	14	7
7– 8 ..	6	6	11	4	11	22	7	29	37	7	3	6	4	7	14
8– 9 ..	5	3	16	6	7	14	6	14	53	5	4	11	1	6	11
9–10 ..	4	3	15	1	5	6	11	18	62	5	2	8	7	4	8
10–11 ..	7	2	5	3	9	3	8	23	73	2	7	16	2	4	4
11–12 ..	5	4	13	0	5	3	10	22	57	1	11	14	5	8	8
12–13 ..	6	0	5	2	4	3	8	16	59	4	7	8	2	6	3
13–14 ..	7	1	4	2	5	1	9	15	45	3	8	4	2	0	3
14–15 ..	15	1	3	0	7	1	13	20	26	1	6	0	4	0	0
15–16 ..	5	0	0	1	4	1	14	23	13	2	9	2	0	2	0
16–17 ..	3	0	2	2	1		18	32	12		1	1	1	0	0
17–18 ..	10	2	1	1	0		21	17	2		10	1	0	4	0
18–19 ..	6	0			0		22	28	1		5		3	1	0
19–20 ..	6	0			2		22	20	1		3		4	1	1
20–21 ..	1	1			0		22	25	1		2		1	0	
21–22 ..	2				0		8	7			0		0	0	
22–23 ..	2				1		21	5			1		2	1	
23–24 ..	0				3		17	2			0		0		
24–25 ..	1				1		7	2	1		1		0		
25–26 ..	1				1		7						1		
26–27 ..	1						5								
27–28 ..							0								
28–29 ..							1								
29–30 ..							3								
30–31 ..							1								
Total No. of trees	96	96	96	108	108	108	496	496	496	96	96	96	100	100	100
Mean yield	14·28	4·20	9·24	4·73	9·03	6·88	10·02	10·88	10·45	6·10	12·65	9·39	6·61	7·49	7·05
Standard devn.	4·66	4·38	29·3	3·88	5·73	2·78	9·10	6·19	3·44	3·58	4·63	2·97	6·82	4·63	3·49

Note on the above article. By Mr. W. W. Mayne, U.P.A.S.I. Coffee Scientific Officer.

This article is of interest as an account of one method of approach to the problem of improving the planting material with respect to yield and quality, and it offers interesting comparisons with the methods which are being followed in S. India with similar ends in view.

The method of individual tree recording along the lines given in this article has not been followed in this country to any appreciable extent, outside of the Experiment Station itself. The reason for this lies in the fact that over the greater part of the coffee area in S. India, the major factor in determining yields appears to be the extent of Leaf Disease attacks. Even if it is not the absolute determiner of yields it must be regarded as the most important single factor. Selection in the first place was therefore directed primarily to disease resistance and most of the initial selections were made on this basis. The selection for high yield and quality would then be made within the resistant types.

In Kenya, the seedling method of testing trees is not used whereas here considerable emphasis is placed on seedling tests, although both grafting and propagation by cuttings is in use to multiply selections. The reasons for this difference lie in the fact that the inheritance of disease resistance appears to follow fairly simple, clear cut lines so that it is hoped that resistant strains may be isolated in comparatively few generations and secondly, with the planting methods in vogue in South India, the establishment of coffee areas by vegetative propagation seems practically impossible.

With the planting distances given in the table, there are only 400 to 600 bushes per acre and grafting may be a practical proposition. The situation is otherwise when the numbers are 1,200 to 1,700 as they are in S. India. While the difficulty of establishing uniform strains by seedling propagation is admitted, the effort to provide improved seed must be made in S. India. If strains showing substantial resistance to Leaf Disease can be developed, with cropping capacities at least equal to existing planting, an improvement will have been effected.

The most interesting point in the account of the results lies in the statement "constitutionally, the majority of the trees are quite capable of carrying heavy crops given the chance." It is mentioned that this is at variance with a frequently expressed opinion on the question of the number of uneconomic trees. At the same time it is pointed out that the poorer trees are nearly all supplies, suggesting that poor bearers in this case are due to other circumstances than the constitution of the trees.

This leads to some interesting reflections. In South India, in observations made by Anstead many years ago, the proportion of poor yielders was much higher than the figure given in this paper and a substantial proportion of the poor yielders in the first year remained poor in the second and third years covered by the observations. These observations were carried out on old coffee while those given in the paper under discussion were probably on relatively young coffee growing under favourable conditions. It may be noted that Kiambu and Donyo Sabuk figures show a much higher proportion of low yielders. It is pointed out that the former area had previously given exceptionally high yields and the yield level of the latter suggests poorer conditions.

It is clear that a careful distinction must be made between plants which are high yielders constitutionally, *i.e.*, contain hereditary factors tending to high fruitfulness and plants which produce high yields owing to favourable conditions of environment and previous history. In the same way, trees may be constitutionally poor yielders or poor yielders because of unfavourable environmental conditions or because of accidents in the past. The great variability in individual tree yields in Indian estates shown by Anstead's figures is almost certainly to be attributed mainly to the latter cause.

The over-riding importance of location and of previous history in coffee under South Indian conditions makes the problem of discovering constitutionally high yielding strains extremely difficult. For a study of this type in South India, it would be necessary to select an area which is young and whose history is free from the many accidents—borer, die back, over-cropping, etc.—which injure permanently the structure and productivity of the trees. Further the effect of shade variations, which are also involved, must be as small as possible. In older coffee in most areas, it is unlikely that individual yield recording could do more than reveal the considerable proportion of trees which are unproductive on account of past accidents. High yielding plants would have to be tested in the same way as outlined in the article, though the likelihood of their being constitutionally superior, is perhaps rather small. (*Note*: "constitutionally" is used in this note to refer to the hereditary make up of the plant as distinct from the health and vigour resulting from environment and history.)

ASSISTANCE TO INDIAN IMPORTERS.

The Director of Administration, Government of India, Department of Supply, New Delhi, has issued the following Press Note dated 23rd December 1939, regarding assistance to Indian importers in the matter of securing their requirements from the United Kingdom:—

"Trade and industry are now generally aware of the arrangements that have been made by the Department of Supply, in conjunction with the authorities in the United Kingdom, to render assistance to Indian importers in the matter of securing their requirements from the British Isles. On several occasions since the outbreak of war this Department has given publicity to the necessity for limiting the number of applications to the Department to those essential cases where import into India is not likely to be secured unless assistance is given. Nevertheless, a large number of cases continue to arise which, on investigation in the United Kingdom, are found not to require assistance in that the goods would have been forthcoming by methods of normal trading without any assistance from the Supply Department. The net upshot of this misuse of the assistance that is available is that the names of the firms from whom these unnecessary applications are received will in future be noted in order that their applications may be submitted to more careful scrutiny."

GERMAN SYNTHETIC RUBBER.

GERMAN RAILWAYS' EXPERIENCE.

For the supply of all kinds of pipes and tubes the German State Railways have laid down stringent conditions with regard to testing and acceptance, which have for long been in operation. These rules make certain minimum demands which years of experience had revealed were always fulfilled by products manufactured of natural rubber of the first quality.

Importance of Brake Tube Materials.—The numerous and varied types of tubes and pipes which are essential to the efficient working of many factories and works are mostly, in spite of often somewhat rapid decay, easy to keep in order because they are easy of access and any damage is quickly discovered and repaired. Conditions with regard to the braking and steam carrying tubes on trains, however, are different and much more complicated. The braking tube is the most important of all to the railway industry, for without this, especially since the general introduction of the continuous goods train brakes, traffic would be unable to be maintained. At the same time, the brake pipe, like the steam pipe, is the most heavily used element of this type on the railways. Not only must it be always in service, but it is exposed to all weather influences and to the destructive penetration of light, and it is subjected to protracted technical claims, and to shaking, bending and thrusting. Not only this, but the action of braking subjects it to continuous variations of internal pressure, to expansion and contraction, and it has also to withstand the influence of damp, rust and the fat content of brake air. The brake pipe must, nevertheless, be always as flexible as possible, because an easy action of the brake pipe coupling is of great importance to the management of a train.

Introduction of artificial fibres.—Selection of the type of artificial rubber to be used on the railways was left in the first place to the rubber works, for the Directors of the Railways were interested in obtaining as varied experience in this field as possible. The majority of the works chose in the first place those types which were easy to work and which offered the best powers of adhesiveness to the woven strata. The State Railways demanded, from the beginning, that for the whole rubber content, including interior and cover, of the woven portions only artificial rubber should be employed, but that the woven layers themselves, for the sake of safety, should continue to be made of long fibred cotton. Continued improvement, however, of staple fibre led to greater and greater quantities (33 per cent., 50 per cent. and 67 per cent), being mixed in with the yarn, and finally brake pipes were manufactured of pure cell wool and artificial rubber. The use of cell wool fibrous layers has brought no unpleasant experiences in its train. Many experiments seem now, however, to be pointing to the fact that for brake and particularly for steam pipes, the so-called "firm" artificial silk will prove, in view of its particular technical adaptability, to be still better. This is probably because artificial silk fibre is more durable when all humidity is removed than is cotton.

Types of test employed.—The successful development of reliable brake and steam pipes has been greatly assisted by stringent testing conditions imposed upon all new products and strict inspection of methods of delivery. The tests consist of a shaking trial on a special machine constructed for the purpose, the pipe being at the same time subjected to extreme air or steam pressure. The test of shaking is particularly effective, and never fails to reveal any flaw in the adhesiveness of the rubber to the woven layers, or any fault in the connection between the core of the pipe and the outer cover. All these requirements have for some time past been as well fulfilled by synthetic as by natural rubber, and this statement is true both as regards adhesiveness of the different layers, the expansion of the rubber and the non-rending quality of the pipe. Synthetic rubber resists ordinary wear and tear as well as pure rubber. As usage has proved no disappointment, it is not unnatural that synthetic rubber has now entirely replaced pure rubber on the German State Railways. The difficulties originally encountered in the preparation of perfect pipes for the conduct of steam have been overcome by the employment of so-called "separated" rubber, namely, Buna type S. This kind of Buna is now used universally for the manufacture of all kinds of pipes.

Only Synthetic Rubber now used.—The change from natural to synthetic rubber, therefore, could only be made after exhaustive tests, in particular, with the brake pipe. It was stressed that quite apart from the technical functions that would have to be fulfilled, reliability—in the present state of railway traffic—was of first importance. Another reason for making the original tests with the brake pipes was that it might be fairly assumed, if artificial rubber stood up to these, it would fulfil its purpose efficiently in all other types of tubes and pipes. The trials were made under the auspices of rubber concerns and with the assistance of the I. G. Farbenindustrie, and their efforts led to the production from the spring of 1935 onwards of large numbers of artificial rubber brake pipes. The trials proved so thoroughly satisfactory that the German Railways to-day use only synthetic rubber for their brake pipes as well as for all kinds of pipes and tubes.

So that a fair picture of the reliability of artificial rubber brake and steam pipes could be gained, all officials were notified that any flaws or failures were instantly to be reported.

Other satisfactory qualities of Buna include great powers of resistance to the action of oil, which makes it particularly useful to the State Railways, and even places it in a category superior to that of the natural product. The brake piston cuffs, which formerly were made of the highest grade of ox hide, much of which was imported, are now made of synthetic rubber. These piston cuffs, in spite of needing far less greasing than the leather ones, have proved to be extremely reliable, just as durable, and requiring far less constant attention than had to be lavished upon their predecessors. Tests have even shown that the synthetic rubber cuffs can be worked for long periods with no greasing without loss of quality and without showing evidences of decay. Their production from synthetic rubber has also many other advantages.

Other applications of Buna.—Buffer rings for brake coupling heads have also been manufactured for some time past exclusively of Buna rubber, and this avoids the former many minor mishaps caused by the natural rubber from which these were formerly made reacting badly to the fat content in the brake air. Pipes and tanks used for petrol and other fuel are also produced in increasing quantities of synthetic materials, notably of synthetic rubber.

Another sphere in which the German State Railways are making more and more comprehensive use of synthetic rubber is in the manufacture of driving belts. These will in future be made only of home produced materials instead of leather, and will consist principally of synthetic rubber with layers of staple fibre or artificial silk. Here, too, the quality of the product must be very high, for it is subjected to a great deal of strain. Above all, there must be great cohesiveness between the rubber and the woven layers. Tests have shown that the artificial materials will fulfil all that is required of them.—(*Rubber Age*).

DISTRICT NOTES.

MYSORE.

C. & lc

Proceedings of the Quarterly Extraordinary General Meeting of the Mysore Planters' Association (Incorporated) held at the Kadur Club, Chikmagalur, on Friday, 15th December, 1939.

Present: 3 Lead

Messrs. A. Middleton (*Chairman*), J. H. Alexander, R. G. Foster, L. G. Gallaher, G. S. Homewood, N. Kirwan, H. S. Northey, P. T. Plunkett, F. A. G. Ratcliffe, W. H. Reed, K. T. Seshaiya, B.A., LL.B., V. L. Travers Drapes, H. Watson and A. L. Hill (*Secretary*).

By Proxy.—Dewan Bahadur S. L. Mathias, K.S.G.

Visitor.—Mr. D. L. Winckler.

The Secretary read the notice calling the meeting.

Before proceeding with the business of the meeting the Chairman requested all members to stand, and spoke as follows:-

"Gentlemen,

It is with the greatest sorrow that I ask you to pass a vote of condolence and sympathy with our former Secretary, Mr. de Weck, on the sudden and overwhelming loss of his wife. It is only one short year ago that she gladdened the district with her arrival, and I am sure every one of us feels the loss as a personal one too, and I will ask our Secretary to write to Mr. de Weck, conveying the Association's deepest regrets, and I am sure that those of our members not present to-day will also wish to be associated with this."

This was passed, all members standing.

The Chairman then referred to the retirement of Mr. S. H. Dennis as follows:—

"Gentlemen,

With the retirement of Mr. Dennis the Association has lost one of its oldest members. He served it and the Bababudin Planters' Association in various capacities as Honorary Secretary and Chairman and represented it many times at U.P.A.S.I. meetings and on the Legislative Council. I now propose that we ask the Secretary to write on our behalf and wish him good health and happiness in his retirement."

This was unanimously agreed to.

Confirmation of the Minutes of the last meeting.—The Chairman said that the Minutes of the last meeting had been published in "The Planters' Chronicle" and suggested they be taken as read.

It was proposed from the Chair and carried unanimously "That the Minutes of the last meeting be confirmed."

REPORT OF THE EXECUTIVE COMMITTEE FOR THE PERIOD 1ST SEPTEMBER TO 30TH NOVEMBER, 1939.

Small

The Secretary said that the Draft Report had been circulated to all members of the Association and had since been adopted by the Committee without alteration and so became the report. The report read as follows:—

Meetings.—A Quarterly Extraordinary General Meeting was held on 9th September 1939.

References.—Fifty-three references and circulars have been sent to the Executive Committee of which forty-seven have been dealt with and six remain to be finally disposed of.

S.I.P.B. Fund.—The Committee has recommended the applications of two ex-members for help from the Fund.

JAIPURA P.O.—The Superintendent of Post Offices has informed the Association that the name of Jaipura P.O. will be changed to Jayapura (Mysore) P.O. from 1st November 1939.

Mysore Prevention of Adulteration Act.—Government has been thanked for their Order No. G. 3672—P.H. 24-39-4 of 18th October 1939 which reads as follows:—

"Under Section 20 of the Mysore Prevention of Adulteration Act, IX of 1921, as amended from time to time, Government are pleased to issue the following additional rule in regard to Coffee:—

'No Coffee sold or prepared for sale as 'green', 'raw' or 'unroasted' coffee or as 'roasted' coffee shall contain any beans or seeds other than those defined in the rules issued under Notification No. G. 7985—P.H. 157-36-6, dated the 30th March 1938, and it shall be free from any artificial colouring matter and from any coating, facing or glazing substance.' "

Shipping Tonnage for Coffee. In September the Secretary, with the subsequent approval of the Committee, and the previous permission of the Chairman of the Coorg Planters' Association had interviews with the Dewan of Mysore and the Secretary to the Chief Commissioner of Coorg and asked them to move the Central Government jointly to provide the necessary tonnage for the export of coffee. Both readily agreed to do so and the case made out with the help of the Secretary of the Indian Coffee Cess Committee was sent by the Residency to the Crown Representative with the strong support of the Government of Mysore, the Resident and the Chief Commissioner of Coorg with copies to the Commerce Department of the Government of India and to the Government of Madras. No information as to the result has as yet been received.

Circulars.—Four circulars dealing with Income-Tax, cartridges for prohibited bore weapons, proposed Committee to look after the interests of members joining up, list of persons who have applied for posts, and minimum prices for coffee have been sent to all members and seventeen circulars dealing with Inspectors of Factories, Amendments to Rules under the Mysore Factories Act, appointing the Director of Industries and Commerce as the Chief Inspector of Factories, supplying Tea to the French Government, payment for Teas requisitioned by Government, maximum prices of commodities in the Hassan and the Kadur Districts, labour requirements on tea estates, remission of half wet assessment in certain villages of the Belur Taluk, National Registration, recruitment into His Majesty's Land Forces, Planters and Military Service, tea samples, and proceedings of the Annual General Meeting of the British Medical Association (Assam Branch) have been sent to those members interested.

A. MIDDLETON .. *Chairman.*
R. C. MORRIS }
N. KIRWAN } .. *Members.*
W. H. REED }

Matters arising out of the Report:—

Shipping Tonnage for Coffee.—The Secretary reported that the Government of Madras had since written to the Commerce Department of the Government of India supporting the representation of the Mysore and Coorg Governments. So far no answer from the Government of India had reached the Association.

Mr. Morris had written that he understood that Coffee is likely to be classed as a "Priority Commodity" for shipping purposes.

No member having any questions to ask it was proposed from the Chair and carried "That the Report be adopted."

REPORT OF MEMBERS, THE LEGISLATVE COUNCIL AND THE REPRESENTATIVE ASSEMBLY.

(*a*) *The Legislative Council.*—As there had been no Session of the Council since the last meeting there was no report from the Member.

(*b*) *The Representative Assembly.*—Mr. Middleton read a comprehensive and very interesting report on the Dasara Session of the Representative Assembly.

Mr. Hill suggested that Mr. Middleton might be asked to try and arrange that District Medical Officers should give reports, say weekly, on patients from a distance left in their hospitals. As things are even the arrival of patients is not always reported and nothing is heard of them until they are discharged or die. This was the case whoever the D.M.O. happened to be, so apparently it was not part of their duty to keep relations or employers informed. He thought it would be of value to villagers who had to leave relations in district hospitals as well as to employers sending in employees to have periodical reports on their progress from the hospitals. The meeting agreed and Mr. Middleton said that he would try to arrange this.

A vote of thanks to Mr. Middleton for his so very ably representing the Association was moved by Mr. Gallaher and carried with acclamation.

Reports of Members, The Hassan and Kadur District Boards.—

(*a*) *Hassan District Board.*—No report had been received from the Member.

(*b*) *Kadur District Board.*— Mr. D'Souza wrote regretting his inability to be present and the absence of a report as he did not attend the Board meetings on 30th and 31st October.

Elections to the Coffee Product Section Committee.—The Secretary pointed out several points where the present regulations for elections and proxies in the U.P.A.S.I. could be considered unsatisfactory and asked for instructions. A prolonged discussion ensued in which it appeared that opinions were divergent. In the end Mr. Gallaher proposed that the question should be left to the Executive Committee and this was agreed to.

Roads.—The main points of the Association's letter of 30th September to the Chief Engineer written as a result of discussion at the last meeting were read, as was the answer which did not deal with the cut in District Board road upkeep grants. Subsequently a letter had been sent under the Executive Committee's instructions to the Dewan and this had been acknowledged. It was hoped that the Dewan would grant the Chairman and Secretary an interview when he visits Saklaspur on 29th December.

The Chairman said that there was reason to hope that the Kadur District Board upkeep grants would be restored from 1940/41 and that Hassan District might be expected to follow suit.

It was pointed out that work of sorts had been done on the roads in the Hassan District in November and December, some being in progress, even that day, the 15th. Presumably this was accounted for by the forthcoming visit of the Dewan.

A complaint from a member of the state of two furlongs of the Chickmagalur–Narasimharajapura Road just North of Mallandur Village was read and instructions asked for. It was reported that some work was now being done. After considerable discussion the Secretary was instructed to write to the Executive Engineer, Kadur Division, and invite his attention to this piece of road.

Coffee Husk.—The Mangalore Curers' Association had agreed to destroy or render unfit for human consumption all Cherry Coffee Husk, whether heavy, medium or light, and Coorg had passed legislation on the lines of the original Mysore Bill, *i.e.,* prohibiting the sale or transport of coffee husk without the special permission of Government. The First Member of Council, who was in charge of the Mysore Bill, had again been asked to amend it as suggested by the Association and had said that he will look into the matter. Subsequently the Development Secretary to the Government had asked how husk was rendered unfit for human consumption. The only set-back was that Travancore was not prepared to co-operate.

A vote of thanks to the Mangalore Curers' Association for agreeing to destroy or render unfit for human consumption all Cherry Coffee husk, whether heavy, medium or light, was proposed from the Chair and carried unanimously.

Control of prices.—Read letter from the Secretary to the Hon'ble the Resident in Mysore and Chief Commissioner of Coorg in answer to the Association's complaint about the 70% rise in the price of quinine. The letter referred the Association to the Governments of Madras and Bombay. The meeting considered that these Governments could hardly be expected to take notice of the Association's representation and decided that the help of the Mysore Government should be sought.

Cinchona.—Mr. Gallaher raised the question of the planting of cinchona and said that although there was probably plenty of land suitable for it in Mysore and that the Mysore Government wish to encourage its cultivation, no planter could be expected to take it up without a guarantee from Government of a reasonable minimum price for the bark when it became available. He suggested that the Association might approach the Dewan. As the Dewan was to visit Kadamane on December 29th, Mr. Gallaher agreed to discuss the question informally with him and let the Association know if further action were required.

Planters and Military Service.—Read the following letter from the U.P.A.S.I.:—

"Dear Sir,

Planters and Military Service.

In the "Planters' Chronicle" of 28th October there was published an appeal from a planter who had difficulty in obtaining employment after the last war; a note on the subject by the President was also published.

I am directed by the President to bring this to the notice of District Associations and to repeat that the U.P.A.S.I. fully endorses the opinion expressed by the General Committee of the Indian Tea Association, Calcutta, in the proceedings of their meeting held on 19th September, that employees who are allowed to join up for war service should be guaranteed employment on demobilisation, and that adequate arrangements should be made to ensure that such employees do not suffer loss in pay or seniority. The President would be glad of the help of District Associations in inducing members to accept this principle.

Yours faithfully,
(*Sd.*) A. G. ACASTER,
Secretary."

It was agreed that it should be sent to all employers.

The Secretary was instructed to ask the National Service Advisory Committee, Madras, for the categories of all members of the Association.

Proposed Special Committee to look after the interests of members joining up.—The following four members had alone agreed to serve on this proposed Committee:—

Mr. N. Kirwan,
Mr. A. Middleton,
Mr. W. H. Reed, and
Mr. C. C. Couchman.

It was decided to ask them to form themselves into a Committee separate from the Association and Mr. Kirwan agreed to get in touch with the other members.

The M.P.A. Marketing Sub-Committee.—All members had been asked if they would agree not to sell from the 1939/40 crop F.A.Q. Plantation at less than Rs. 30 per cwt. ex bags, or whole crop pounded Cherry on a 5% Triage basis at less than Rs. 125 per Candy of 576 lbs. Eight members so agreed and four members declined to agree: the remainder had not answered. Mr. Kirwan said that the Sub-Committee had heard nothing from the Coffee Section about other districts and that nothing could be done at the moment. The matter was left with the Marketing Sub-Committee.

Coffee Scientific Department.—Read letter from the Chairman, the Coffee Section, stating that the Imperial Council of Agricultural Research wished the Coffee Scientific Officer to undertake a cardamom survey as a preliminary to cardamom research work and that therefore the question of the Coffee Scientific Officer undertaking tea scientific work no longer arose. This was noted with satisfaction.

Constitutional Reforms in Mysore.—The Secretary said that all members must have seen in the paper His Highness's Proclamation and the Government's Order on the Reforms Committee's Report. As regards representation the Association had been granted what it had asked for. Europeans as a Minority get one seat in the Representative Assembly and one seat in the Legislative Council and similarly European Planting Interests get one seat in each of the two bodies. For the European seat in the Representative Assembly the European Association in Mysore was the Constituency and had been recommended by the Reforms Committee as the Constituency for the Legislative Council also. Government had not specified any constituency for the European Planting seats in the Assembly and the Council and the Association had asked that Government recognise it as the constituency for both the seats.

It was agreed that the Association should thank Government for the representation granted.

Any other matters of importance.—

(*a*) *Hassan and Chikmagalur Cattle Shows.*—Read notices of the Hassan Cattle Show from 2nd to 6th January 1940 and the Chikmagalur Cattle Show from 17th to 20th December 1939.

The President of the Chikmagalur Town Municipal Council had asked the Association to give a prize, but it was considered that the Articles of Association did not permit of this.

(*b*) Read the following notice from the Residency:—

(*i*) *Requirements of French Consular Visas from British Subjects other than Indians for entry into French Establishments in India.*—Intimation has been received from His Majesty's Consul-General at Pondicherry that British Subjects other than Indians entering French Establishments in India are required to obtain French Consular Visas on their passports.

(*ii*) *Requirement of Visas from aliens proceeding to Ceylon.*—Intimation has been received from the Government of Ceylon that all aliens desiring to enter Ceylon will now require visas for that country.

(*iii*) *Imposition of quarantine restrictions.*—Passengers leaving the C. & M. Station of Bangalore or Coorg or the Mysore, Banganapalle or Sandur States for foreign countries by sea or air would be well advised before completing their plans to ask at the Resident's office where the latest information regarding various restrictions on travel on account of infectious diseases, etc., can be obtained.

(*c*) Read the following letter *re.* copper sulphate:—

Letter No. W-11 of 16th November 1939 from the Secretary, U.P.A.S.I., to all District Planters' Associations:—

"Dear Sir,

Import Priority Certificates.

With reference to my circular of 27th October, I attach, for your information, a copy of a letter dated 14th November from the Imperial Chemical Industries (India) Ltd.

Yours faithfully,
(*Sd.*) A. G. ACASTER,
Secretary."

Copy of letter dated 14th November 1939 from Messrs. Imperial Chemical Industries (India) Ltd., to the Secretary, the U.P.A.S.I.:—

"Dear Sir,

Copper Sulphate.

We have received a copy of the letter of November 7th, from the Government of India, Department of Supply, addressed to you regarding supplies of copper sulphate. We have pleasure in informing you that we anticipate no difficulty whatsoever in supplying the full requirements of copper sulphate for the planting industry during the coming year and the bulk of shipments required are in fact already on the way.

Yours faithfully,
(*Sd.*)
Manager, Madras Branch."

(*d*) Read Government Order No. D. 2661-66-I. & C. 323-38-4, appointing a Committee for the resuscitation of the cardamom industry in the State, to which Messrs. Middleton and Gallaher are appointed.

(*e*) Read letter from the U.P.A.S.I. asking for any subjects to be brought before the South Indian Railway Advisory Committee at its meeting on 27th January 1940.

(*f*) Read the Hassan District Magistrate's Notification No. L. Dis. Jl. 207-39-40 appointing the Court of Bench Magistrates, Saklaspur, to try offences under the Destructive Insects and Pests Act of 1917 arising in the Manjarabad Taluk.

(*g*) Read letter from Orrem Coffee Company, Madras, about direct purchases of coffee and tea from estates.

(*h*) Read letter from the President, 14th Coorg Battalion (I.T.F.) Advisory Committee asking members to give men of that Battalion preference in employment.

(*i*) Reported information available in the Secretary's office about:—

(*i*) Priority Assistance in Imports (Department of Supplies Press Note of 17th November and relevant Forms).

(*ii*) Government's decision to establish a Broadcasting Station at Mysore and a small Transmitting Station at Bangalore.

(*iii*) The Comptroller's Circular No. 398-B. 2 of 28th November regarding the acceptance of cheques on Banks in payment of Government dues.

(*iv*) Reported the change in Arms Licence in Form No. IX. This licence is to be issued for "protection and display" and Arms Licences for Sport are to be granted only under the Game Laws. A forthcoming comprehensive amendment of the Game Law and Rules had been announced by Government in May but had not yet been gazetted.

(*j*) *Labour Department.*—Read letter dated 8th December from Mr. Gallaher regarding the future of the Labour Department. It was decided that it would be better if the matter were discussed at the next general meeting after giving due notice to all members of the Association. The Secretary was instructed to put the matter on the agenda of the next meeting.

Budget for the year 1940.—The draft budget had been circulated to all members of the Association. No questions being raised it was proposed from the Chair and carried "That the budget for 1940 be passed."

Date of next meeting.—The Secretary was instructed to call the Annual General Meeting on a convenient day between 16th and 31st March 1940.

With a vote of thanks to the Chair proposed by Mr. Gallaher and one to the Kadur Club for the use of its room proposed by the Chair the meeting terminated.

A. MIDDLETON,
Chairman.

A. L. HILL,
Secretary.

D. J. McFARLAN.

D. J. McFarlan died in England on 1st January 1940. He was born on 1st March 1862 and had a long connection with South Indian Planting which only terminated with his death. He came out to India at the end of the eighties as Manager for Messrs. Arbuthnots in Mangalore and for a short time in Calicut. At the beginning of the century he returned to London and joined the late R. S. Anderson in the Firm of Leslie & Anderson. On the death of the latter he became senior partner. Though the Firm extended in other directions he retained personal charge of the South Indian connection and up to the outbreak of War many Planters in different districts received his regular weekly letters. He was a handsome and gentle mannered man who will be missed in Mincing Lane where he was greatly respected, as by his constituents many of very old standing. He was a fine athlete in his younger days. Educated at Loretto he played Rugger for Loretto and the London Scottish and was a distinguished Scottish International. He played regularly for Scotland: from 1883 to 1888 against Ireland: from 1883 to 1886 against Wales: and in 1884 against England. A fine period with such contemporaries as W. E. Maclagan and the brothers Don Wauchope. He was also no mean cricketer and the boards at Chepauk show that he appeared twice in Presidency matches in 1892 and again twice in 1893 including the match against the Authentics.

W. K. M. LANGLEY.

D. COCKBURN

David Cockburn died at the Ootacamund Hospital on 12th December 1939.

Mr. David Cockburn was the owner, at one time, of several Coffee Estates in the Kotagiri District and retired from active planting many years ago.

PUT THE BLAME ON CHURCHILL.

The Nazis have a pleasant trick,
And often as they drop a brick,
They do not try to foot the bill,
But put the blame on Churchill.

Their bombers find our fishing fleet
Is quite unarmed, and easy meat,
But if they cannot maim and kill,
They put the blame on Churchill.

Their pocket battleship is fought,
And forced into a Neutral port,
Much rather though, than take the pill,
They put the blame on Churchill.

We learn at last that Goering's frau
Has borne a child; we wonder now
How truth perverting Goebbels will
Contrive to blame our Churchill.

ANON.

"THE PLANTERS' CHRONICLE"—1939, VOL. NO. XXXIV.

We have to inform readers that the Index and the Bound Volume of the "Planters' Chronicle" for last year will be ready for issue shortly.

As in previous years, the price of the volume for members will be Rs. 5, postage extra, and that for non-members Rs. 10, excluding postage. Subscribers who wish to bind their own numbers may obtain a copy of the Index for Re. 1, post free.

Those who want either the Index or the volume may kindly intimate to us their requirements immediately.

HIGH RANGE WAR WORK COMMITTEE.

A very successful Sale of Work was held at the High Range Club on December 2nd and over Rs. 1,100 was raised for War Charities. The larger portion of this amount is being sent to the Mansion House Fund to provide comforts for the men of the Royal Navy and Merchant Service.

A further sum of £30 was collected by subscription of which £15 has been sent to the Cigarette Fund of Overseas League and £15 to the Xmas Hamper for Troops.

RUBBER AND QUOTA PRICES.

The approximate current prices in Kottayam on 6th January 1940 were:—

Rubber, 1st quality	34.00 cents a lb.
Rubber Export Quota	16.50 cents a lb.

MARKET REPORT AND PRICES

The Calcutta Market.

(*Extracts from the Calcutta Tea Brokers' Association Reports*).

Sale No. 28 was held on 8th and 9th January, 1940.

Medium quality brokens were a full three pies lower, while leaf grades were irregular. For other sorts the market was strong; common brokens were firm, while tippy teas and Fannings were dearer.

DESCRIPTION	Season 1939–40		Average on same date	
	Sale No. 28	Average to date	In 1938	In 1937
	As. p.	As. p.	As. p.	As. p.
With Export Rights	12 10	11 5	9 8	10 8
For Internal Consumption :—				
Leaf Teas	5 0	4 8	3 10	4 3
Dusts	4 10	4 5	4 7	5 1
Green Teas	8 9	5 7	4 10	..

RUBBER.—London Rubber on January 15, 1940, 11¾d.

The Colombo Market.

(*Issued by the Colombo Brokers' Association*).

Average prices obtained (*in cents.*)

SOUTH INDIAN TEA.

	Sales on Dec. 30, 1939		*Sales on* Dec. 30, 1939
Anei Erngal	74	Karamalai	93
Atchencoil	82	Kumbazha	74
Barham	76	Manalaroo	78
Bengorm	92	Rob Roy	94
Deviview	1·07	Vagavurrai	89
Glenmorgan	90	Vellamalai	86
Havukal	78	Yendayar	66
Kanniamallay	82/88		

The Madras Market.

Current on 18*th January*, 1940.

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

One of the chief features during the past fortnight's trading has been the firmness in the Gilt-Edged market which has closely followed the London trend. Otherwise, in the Share Market proper prices have shown a tendency to sag. Most of the leading speculative counters have recorded sharp falls notably in Tata issues and in Indian Irons & Steel. Locally, conditions have been dull from day to day and prices in all sections have shown a tendency to sag, not so much due to the increase in selling pressure, but to the entire absence of fresh buying support.

Rubber.—The price of Spot rubber has ruled steady in London at around 8¾*d.*, but in the absence of fresh support most of the local rubber shares have shown a tendency to sag. Cochin-Malabars were transacted at down to Rs. 6-14 as., with sellers over. Malankaras were possibly available at under Rs. 40 while Thirumbadis were offered at the close at Re. 1-13 as., as against a previous marking of Re. 1-15 as. Vaikundams changed hands at Rs. 7-8 as., while Tropicals were marked lower at Rs. 17. Business was also reported in Kalpettas at Rs. 18-12 as., and Rajagiris at Rs. 4-15 as. Cochin Rubbers were offered in small parcels at Rs. 16 and Midlands were easier at Rs. 4-15 as.

Teas.—Since the Christmas holidays tea shares have not maintained their past firmness and with one or two exceptions prices are lower. Periakaramalais changed hands at down to Rs. 17-10 as., at which price there were buyers over. Chembra Peaks were also lower at Rs. 3-1 an., while Peermades after changing hands at up to Rs. 27 closed lower at Rs. 26-4 as. United Nilgiris on the other hand have ready buyers at Rs. 106-8 as. *ex* dividend and Vellamalais were well supported at Rs. 8 with no quoted sellers in the market. Devasholas were unchanged at Rs. 7-8 as.

FORTNIGHTLY RAINFALL STATEMENT.

December 24, 1939 to January 6, 1940—(Inclusive).

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty	N.R.	N.R.	106·66	..	25. Kotagiri ..	..	..	56·46	56·46
3. Kallar B'dge	..	..	162·18	162·18	26. Ootacamund ..	..	..	55·71	55·71
4. Koney ..	N.R.	N.R.	122·29	..	27. Yercaud ..	..	0·08	71·92	72·00
8. Twyford ..	..	..	242·35	242·35	30. Devarshola				
9. Pettimudi ..	..	..	328·51	328·51	T.E.S. ..	N.R.	N.R.	77.58	..
10. Kalaar ..	..	..	236·44	236·44	31. CALICUT ..	..	..	115·22	115·22
11. Chittavurrai	..	..	41·46	41·46	32. Kuttiyadi ..	..	..	191·73	191·73
12. BODI'KANUR	..	..	20·17	20·17	33. Vayitri ..	..	..	151·16	151·16
13. COCHIN ..	..	..	131·21	131·21	34. Manantoddi ..	..	..	83·97	83·97
14. Moeply ..	..	..	130·62	130·62	35. Bilgiris ..	..	..	66·40	66·40
15. Pachaimallai	..	..	125·74	125·74	38. Pollibetta ..	..	..	61·18	61·18
16. Mudis ..	..	..	179·59	179·59	39. Coovercolly ..	N.R.	N.R.	74·22	..
17. POLLACHI	..	..	33·06	33·06					
18. Ropeway					41. Kadamane ..	N.R.	N.R.	265·52	..
Waterfall	N.R.	N.R.	97·01	..	43. Merthisub'gey	..	..	99·02	99·02
21. Kerala Estate	..	..	148·63	148·63	45. Balehonnur ..	..	..	88·54	88·54
22. Naduvattam	..	..	118·33	118·33	46. MANGALORE ..	..	..	116·41	116·41
24. Coonoor ..	..	..	48·60	48·60	47. MADRAS ..	..	0·09	32·67	33·76

N.R.=No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The *Tea and Coffee Trade Journal* of New York has published with its issue for December 1939 a most interesting Special Supplement on U.S.A. tea statistics. The Editor's note points out that there are no accurate statistics on the consumption of tea in the United States and that in practice the import figures are taken as reflecting consumption; the Supplement attempts to define the gap between imports and consumption, and to arrive at a closer approximation of the latter than has been hitherto available.

Part I consists of a statistical summary of tea import figures from 1897 to 1937. It is of interest to note that imports of tea have lagged very much behind the increase in population; in 1897 imports of all teas represented a *per capita* allowance of 2¼ lbs., whereas the 1937 figures represented less than ¾ lb. per head. The imports *per capita* have apparently declined even since 1927; and to increase the consumption to the 1897 level suggests itself as a worthy aim for our propaganda in America. Figures for the three-year moving average over the period 1929-39 are encouraging for producers of black teas; they show that, with the exception of a slight decrease in the years 1933-35, imports of black tea have steadily increased from about 44 to 69 million pounds. Over the same period, and on the same three-year moving average basis, the percentage of black to all teas has risen steadily from 47% to about 78%.

Part II is an examination of the relation of tea stocks to imports and consumption. Accurate figures are not yet obtainable, but representative figures were obtained on behalf of the Tea Bureau, Inc., from importers, packers, jobbers, wholesale grocery companies and warehouses or factories of corporate chain grocery companies for December 31 of the three years 1936, 1937 and 1938; eighty-three companies, whose stocks were estimated to represent 80% of the total stocks held by these various classes of merchants, supplied figures. After making the necessary estimated allowances, the study arrives at figures described as 'adjusted imports', these figures representing the actual imports during the year plus the stocks on hand at the beginning of the year minus the stocks on hand at the end of the year. The results are interesting; whereas the total tea imports for 1937 and 1938 were 95,552,828 lbs. and 79,735,927 lbs. respectively, the 'adjusted imports' were 92,340,965 lbs. and 83,587,803 lbs.—a less serious drop than appears from the usual tea import figures. These 'adjusted imports' however, it is emphasised, still do not represent consumption and more complete data would be necessary before it would be possible to make an authoritative estimate of this.

Part III gives an analysis of tea imports, adjusted and unadjusted, in relation to other economic factors. It is of interest to note that imports of black teas from India, Ceylon, Java, Sumatra and Africa declined by only about 4% in 1938 from 1937, as compared with 10% for all black teas, 17% for all teas, 15% for manufactured foodstuffs, 25% for crude foodstuffs and about 27% for all imports for consumption, i.e., the decline in imports of black teas was less than the decline in any of the general imports. On the other hand, if the figures of 'adjusted imports' are taken, the decline in the figures for India, Ceylon, Java, Sumatra and Africa black teas is only 1.7% and that for all black teas 4.5%. The study then goes on to consider these figures in relation to such factors as the volume of imports, of wholesale and retail trade, of retail food sales and of 'real' national income. One feels at times that the bewildering calculations introduced are rather an example of the statistician's virtuosity than figures of practical value, but, assuming that the data is reasonably reliable, the results are decidedly interesting. On the 'adjusted imports' figures black teas, particularly those from India, Ceylon, Java, Sumatra and Africa, took a greater share of the national income in 1938 than they did in 1937, and also represented a greater percentage of the volume of retail and wholesale trade. It is encouraging to note that the work so well begun will be continued:—

'Plans are being made by the Tea Bureau to continue the annual collection of data on tea stocks, so that the graphs of adjusted tea imports may be continued into the future even if it is not possible to project them into the past. It is certain that this adjustment, though it does not provide a true measure of consumption, makes unmistakable the distinction between imports and consumption. And it is hoped that the adjustment goes further than that, taking sufficient account of the essential factor of change in stocks in 1937 and 1938 to provide a closer *approximation* of consumption in these years than has ever before been available in this country.'

TAILPIECE

Three managers of chicken farms in Germany were being questioned by a Gestapo man. 'What do you feed your chickens?' the first was asked.

'Corn.'

'You're under arrest! We use corn to feed people!'

The second overheard this conversation and tried to play safe.

'What do you feed your chickens?' came the question.

'Corn husks.'

'You're under arrest! We use the husks to make cloth. And you?' he asked, turning to the third man.

'I give my chickens the money and tell them to go and buy their own food.'

COFFEE BLACK BEAN

Recent reports from the Bababudins and the Billigirirangans indicate that this defect has appeared again during the current crop. So far no reports have been received from other districts and as far as my personal knowledge goes, these defects appear to be absent in other areas of Mysore and Coorg. In order to collect information on this defect of coffee, the following note is published to indicate the type of information which is considered to be of importance.

1. *Type of Defects present.*—A number of bean defects appear to be closely related though different in their pathological characters. The following is a summary of the types known.

A. *Floaters.*

(i) Parchment normal, bean unevenly pigmented with various shades of brown, frequently wrinked and folded with rough glistening patches in the folds. Bean soft but not exuding liquid on pressure.

(ii) Parchment normal. Bean black and smooth, very soft and exuding a dark brownish fluid on pressure.

B. *Sinkers.*

(i) Symptoms as for A. (i) but bean only partly affected with the remainder more or less normal. In the slightest affected cases the damage consists only of a small circular spot clearly marked off from the normal bean which is dark brown in colour and slightly depressed.

(ii) Parchment normal. Silver skin more or less completely black but bean meat apparently normal. When dried beans small and shrivelled. In mild cases, the discoloration is less and gives a brownish stained bean sometimes known as 'burnt' bean by curers.

(iii) Parchment normal. When wet, the bean shows through the parchment with a more or less bright green colour. Dried beans almost invariably small, withered and very heavily coated.

Information on the type of defect occurring should always be given in reports of the occurrence of bean defects. The first group are of course readily seen when the coffee is pulped. The second group are usually only identifiable when the parchment is wet and after hulling. The green beans described under B. (iii) are only really identifiable with certainty when the parchment is wet since it is not certain that such beans alone give rise to the type of dry and withered bean noted in separately prepared samples of green beans.

2. *Distribution in the Crop.*—Information on whether these defects are found throughout the crop or only from certain areas or from certain pickings may be of value and should be given wherever possible.

3. *Fruit Developments.*—As these defects are undoubtedly the result of abnormalities in development as full information as possible of the course of fruit development is desirable. This includes the time of the blossom, whether blossoming was simultaneous or whether there were several blossoms, the time when swelling was first noticeable and whether this was irregular and also when the beans attained their full (unripe) size. In connection with the study of these defects it would be of great value if estate managers would arrange to examine or have examined the stages of bean development as determined by cutting across samples of beans at regular intervals. Such examination of the beans when they are approaching their full unripe size may be of great value in throwing light on these obscure defects. It should be possible to record three main stages: (1) greenish gelatinous stage; (2) soft white pulp stage; (3) hardening

stage. If such examinations were made at, say, fortnightly intervals until the 3rd stage was found, it might be of very great value. Experience at the Experiment Station has shown that considerable variation occurs in the attainment of such stages in different years.

4. *General Condition of the Coffee.*—Information on the general condition of the coffee during the year is essential, with especial reference to any peculiarities in the distribution of growth and of leaf fall.

5. *Climatic Conditions.*—As full details of the climatic conditions during the whole period of crop development are essential. In particular, notes on the weather of the period immediately after the blossom and of any periods of exceptionally heavy and continuous rain or exceptional periods of dry weather are desirable. If such data can be related to developmental stages of the fruit, so much more valuable will they be. In the case of estates which have suffered severely from these defects, similar information for years when the defects are absent or few is of value.

The irregularity with which these defects appear and the great difficulty in studying them make it necessary that as much information as possible should be collected from as wide an area as possible, in the hope that the careful collation of reports may reveal some common factor which may lead to a better understanding of the causes. It is only by the co-operation of planters that such information can be collected and it is hoped that managers and owners of estates will assist by submitting reports with as much information as possible along the lines indicated.

W. WILSON MAYNE.
U.P.A.S.I. Coffee Scientific Officer.

INDUSTRIAL DISPUTES IN INDIA

2nd Quarter, 1939.

The total number of industrial disputes during the quarter ended 30th June, 1939, was 109 involving nearly 95,000 men. More than 1½ million working days were lost.

Textile and Jute mills account for 39 per cent. of the strikes, 62 per cent. of the workers involved, and 35 per cent. of the loss of working days. There were no disputes in Railways or Railway Workshops.

The important strikes which occurred during the quarter were those in the Assam Oil Company at Digboi and Tinsukia (Assam) and in the Victoria Mills Co., Ltd., Cawnpore, involving respectively 10,000 and 4,070 workers and causing a loss of 758,000 and 118,000 working days.

The following is a classification by industries:—

Industries	*No. of disputes*	*No. of workers involved*	*Days lost*
Cotton and Woollen Mills ...	33	23,300	309,000
Jute Mills	10	29,500	251,600
Engineering Workshops ...	7	4,600	42,300
Railways including Ry. Workshops	...	...	...
Mines	1	1,500	1,800
Others—Miscellaneous ...	58	29,800	975,000
Total ...	109	94,800	1,579,800

—*Industrial Bulletin.*

COFFEE LEAF DISEASE ATTACKS IN 1940

During 1939, coffee leaf disease attacks in most parts of Mysore and Coorg have been exceptionally light. This situation was to be expected in the light of previous work[1] since the dry weather of 1938-9 was prolonged and the hot weather months of 1939 were dry. The result of these circumstances is that at the moment coffee is very full of leaf but at the same time there is a considerable amount of late leaf disease infection, much of which is unlikely to be eliminated by dry weather leaf fall. The presence of these infections is likely to lead to an early start of leaf disease attacks in the coming season unless control measures are carried out at appropriate times. The exact degree of severity cannot, of course, be estimated as this will be greatly influenced by the time at which blossom showers fall and by the amount of rain in the months of April and May. It is safe to assume, however, that there are risks of severe attacks as a result of the heavy carry over of lightly infected leaf resulting from the late and comparatively light attacks of 1939.

In the light of this, it is suggested that every effort should be made to carry out full spray programmes in the coming hot weather. It is realised that the difficulty of purchasing Copper Sulphate and the high cost of such supplies as are available makes it necessary to consider spraying programmes with great care. This note is intended to suggest that this hot weather is the most unsuitable season to abandon any part of a spray programme if it can possibly be avoided.

Experiments were started almost immediately war broke out to study the possibilities of still further reducing the concentration of Copper Sulphate in Bordeaux Mixture for coffee spraying. Results of these trials will be available in a week or so and will be reported as soon as they have been analysed. While a post monsoon spray cannot be considered the most suitable for studying the relative effectiveness of spray mixtures, it is hoped that the extreme lateness of attacks this year may make them more valuable than they would be normally.

W. WILSON MAYNE,
U.P.A.S.I. Coffee Scientific Officer.

VICTORIA RUPEES

Fort St. George, January 16, 1940

[G.O. Ms. No. 12, Finance (Ways and Means).]
No. 4.

The following notice issued by the Government of India is published for general information:—

There appears to be a widespread misapprehension that Victoria rupees, i.e., rupees issued in the reign of Queen Victoria and bearing her effigy, are not legal tender and are not accepted at treasuries and sub-treasuries. These coins have always been and continue to be legal tender and the public are informed that they may present any Victoria coin about which they are in doubt at any branch of the Imperial Bank doing Government treasury business, or at any treasury or sub-treasury and provided they are found to be genuine and have not been fraudulently defaced they will be accepted at their full face value without restrictions or deduction on account of light weight.

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[1] Mayne, W. W., 'Factors Affecting Spray Success in the Control of Coffee Leaf Disease', Mysore Coffee Expt. Sta., Bul. 15, 1937.

MANURING OF TEA IN WAR TIME—REVIEW

Indian Tea Association: Memorandum No. 10: 'Manuring of Tea in War Time' *by H. R. Cooper, Tocklai Experimental Station.*

Like a good many other things, the manuring of tea will have to undergo changes and modifications as a result of the war. This timely and very valuable memorandum points out that the export of fertilisers from the United Kingdom has been prohibited and supplies from other sources will be unavailable or considerably restricted. All round a very material increase in fertiliser price levels is to be anticipated. What steps then can be taken to maintain yields and prevent deterioration of the tea areas?

The memorandum shows that for mature tea, Nitrogen is the main factor in crop production and must therefore receive the greatest attention, while Phosphoric Acid and Potash can safely be left out of the manurial scheme during the war, since crop response from them has nearly always been negligible.

A table is given which shows the increased crop in pounds of tea which has been obtained per pound Nitrogen from various sources of nitrogen-containing manures. Thus 1 lb. Nitrogen in Sulphate of Ammonia increases crop 7.7 lbs.; in animal meal 6.6 lbs.; in cattle manure 4.0 lbs.; and in green Boga medeloa cuttings 5.8 lbs. If one anna is the cost of manure for each pound of tea produced as a result of these manures, the table makes Sulphate of Ammonia worth Rs. 222 per ton; Animal Meal Rs. 65 per ton; Cattle Manure Rs. 3 per ton and green manure Rs. 8 per ton. Therefore if a profit of two annas per pound of tea is being made then it would pay to buy manures at the prices shown in the table, at the given crop responses. If there is 4 annas per pound profit, then double those prices can be paid. The figures take account only of the Nitrogen content. An interesting point is that on these results 'Sulphate of Ammonia may rise considerably over its pre-war price of Rs. 121 before it ceases to be profitable while in comparison with Sulphate of Ammonia as high even as Rs. 222, the organic manures are not worth even their pre-war prices'.

The memorandum next deals with the highly important factor of which areas of tea should receive purchased fertilisers, if available, and which areas are likely to be able to hold their own without fertilisers. It is suggested that 'the use of purchased nitrogenous fertilisers should be confined mainly to good, mature tea in full plucking, where shade trees are either absent, very sparsely planted, very young or in very poor condition', for 'heavily shaded tea makes no use of nitrogenous fertilisers, while moderately shaded tea will fall away in crop only slowly if manuring ceases'. It is further advised that heavy and medium pruned tea should not be manured in the year after pruning while purchased fertilisers cannot be afforded for very poor, old, diseased tea which is incapable of responding fully to manures. Rather, sick tea should be left under green manure crops or shade trees to maintain the soil in good condition.

Mention is made of the fact that India does produce limited supplies of Nitrate of Potash and as newly planted tea has been found to benefit greatly from Potash, the use of Nitrate of Potash for this purpose is very suitable since it contains Nitrogen (9 to 10 per cent.) and Potash (30 to 33 per cent.) which has been found to be just about the right proportions for very young tea.

While not advising the extension of the use of the manufacture of 'humus compost' the memorandum advises a great extension of the use of leguminous plants grown in the tea.

The second section—which, be it noted, occupies more than half the memorandum—is devoted to the use of leguminous manures, and gives results of experiments of growing leguminous crops among tea, as well as a recommendation on the use of Boga medeloa.

The data from field trials shows that while Boga medeloa was growing in the tea it reduced crop significantly, but that very large increases in crop were obtained in the years following the removal of the legume from the land, the preliminary loss of crop being accounted for by the competition between the legume and the tea and the consideration that its presence reduces the availability of manures. The subsequent increase is due to the accumulation of Nitrogen as a result of growing the legume though the rotting in the soil of loppings and leaves and the absence of competition. A very large profit is shown in balance.

Experiments reveal lopped hedges of Boga medeloa in alternate lines of tea, kept up for two years, as equal to the effect of 400 lbs. of Sulphate of Ammonia, and 'if the Boga medeloa is sown in the lines not previously used, at the end of every second year, we may expect that a crop of tea will be maintained equal to that maintainable by annual application of about 200 lbs. of Sulphate of Ammonia per acre'.

Although waste land near tea is usually limited, the preliminary loss of crop by growing legumes in tea can be overcome by using such land as is available for growing green manures. The loppings are put into the tea. Apart from the fact that green manures give a larger amount of material than 'jungle', the fertility of the land in which they are to be grown is not reduced as it would be if jungle growth was continuously being cut and carried into the tea.

It is pointed out that not all legumes fix Nitrogen from the air and thereby add to the accumulation of Nitrogen in the soil.

This memorandum—which gives us in South India much food for thought—concludes with a note on a suitable method of dealing with Boga medeloa, advising a seed rate of 5 lbs./acre; that it should be planted in a single line in clean soil, and the plants thinned out to 6" apart when they are about a foot high; and they should be lopped across, and at the sides when they are 5 feet high. Phosphatic manures are very valuable for green manures.

J. D. MANNING.

Further Notes by Mr. J. D. Manning, U.P.A.S.I. Tea Scientific Officer.

It may be worth while to consider the position in South India especially as it applies to the points raised in the above memorandum.

Certain information in regard to the supplies and prices of fertilisers has just been received. From this it is clear that although the present stocks of Sulphate of Ammonia are very small, there is advice that the British export ban on Sulphate of Ammonia will be lifted in January, and supplies may be available by March/April onwards. In spite of this it is unlikely that supplies will be quite normal, and in any case, there must be a considerable rise in prices, and we must reckon on Sulphate of Ammonia costing at least Rs. 200 on the estate.

Since October, the ban on the export of Superphosphate from the main producing centres of the world has been lifted. It would seem that present stocks are very limited, and the price has risen considerably. When new shipments arrive it is anticipated that the price for concentrated superphosphate will show an increase of over 25 per cent. Thus this manure would cost about Rs. 200. In the same way the price of ordinary superphosphate has risen very appreciably. The same applies to mineral phosphates. As yet there is apparently no rise in the price of the organic manures containing Nitrogen and Phosphate. There are likely to be unlimited supplies of these manures. New stocks of Muriate of Potash are expected, and limited stocks are likely to be available all this year, with a 20 per cent. increase in price or thereabouts.

Supplies of Nitrate of Potash produced in India are sure to increase, and may be available at reasonable prices.

On the whole, then, it is safe to assume that, contrary to earlier expectations, supplies of most fertilisers will be available; but the increase in price is considerable, and for that reason it may be necessary to curtail manuring schemes to some extent.

Although the experimental data for manuring tea in South India is very meagre, the indications we have, and what has happened in practice, show that as in North India—and in Ceylon—the chief factor in crop production from the manurial point of view is Nitrogen, and that with large increases in prices Phosphoric Acid and Potash can be left out of the scheme for the period of the War. Partly for reasons of climate, partly because of the soil, and partly because of differences in cultivation and management, we cannot expect the increases in crop per pound of Nitrogen applied in anything like the proportions which have been obtained in the North. Therefore the price at which it pays to purchase Nitrogen is very much less.

Happily there has in South India been real progress in prevention of soil deterioration and erosion by shading, the use of leguminous covers, controlled weed growth, and green manure crops. When this has been done large responses from applied artificials cannot be expected, yet deterioration and drop in crop if artificials are not applied is not so marked. Moreover, much of our tea land is deep and well drained, and recent work on tea roots at Devarshola has shown that even young (1928) tea has a very widespread root system and the roots penetrate to 10 feet and below. Thus there is a vast volume of soil from which the plants can draw their supplies of moisture and nutrients. At the same time we must anticipate that in shallow soils, in worn-out soils, and where tea suffers severe checks by Helopeltis attacks, the use of fertilisers, particularly Nitrogen, is more important, and is an economical proposition at higher prices than elsewhere.

At higher prices artificials can only be applied where and when most needed. They can therefore be omitted in the first year after pruning.

Tocklai strongly advise the extension of the use of leguminous crops for green manures, and this advice is worthy of serious consideration for South India. Leguminous crops grow well here, and there is a wide variety of species. Indigofera encaphylla is a valuable low growing plant, and Crotalaria anagyroides, Crotalaria striata and Boga medeloa are taller plants which give a vast bulk of very valuable material. And there are many others. The species mentioned appear to be capable of fixing Nitrogen from the air and so add to the accumulation of soil Nitrogen. Cassia hirsuta, however, is a legume commonly seen but is not usually a nitrogen fixer.

These crops can either be grown in the tea or on waste land. If grown in the tea they can best be established in the year of pruning, and allowed to grow for a year or longer, being lopped at intervals. They can be planted in every second, third, fourth or fifth row, and especially wherever there are vacancies. As we have a number of species which flourish it is better that more than one species be used.

It is always necessary to sow at a seed rate which usually gives too many plants, since allowance must be made for poor germination and casualties. If thinning out is done in the rows, the extra young plants can be transplanted in other fields or in waste land.

It is the rule rather than the exception in South India that estates have waste land which could be utilised for growing green manure crops to provide bulky manures for the tea. As nitrogen-fixing legumes would not cause deterioration of such soil, it is preferable to use them in waste land, but among other plants which are particularly useful are wild Sunflower and Mugwort. They both stand up to lopping.

From the waste land there is also a large amount of 'jungle' growth which can be utilised as a manure for tea. Apart from the fact that a great deal of this material is 'tough' and takes a long time to break down in the soil, the normal rate of decomposition of green material in the soil is comparatively slow in the average South Indian climate, and notably so at the higher elevations. So that while such material has value as manure, the best form in which it can be applied to the soil is in the form of compost. If the price of Sulphate of Ammonia rises to Rs. 200 a ton, 1 lb. Nitrogen as Sulphate of Ammonia costs 6.9 annas. An average well made compost contains 11.2 lbs. Nitrogen per ton. If the Nitrogen in compost is 50 per cent. as efficient as that in Sulphate of Ammonia, then the 11.2 lbs. of Nitrogen are worth 39.2 annas. To value compost at 39.2 annas a ton does not take into account the Phosphoric Acid and Potash it contains or its other benefits. If the value of the Phosphoric Acid and Potash is included, then reckoned on 40 per cent. concentrated superphosphate at Rs. 200 a ton and Muriate of Potash at Rs. 180 a ton, we get a value of 22.4 annas for Phosphate and 28.8 annas for Potash, a total value for N.P.K. of Rs. 5-10-0. And that is only part of the story, for the other benefits of adding organic matter to the soil are recognised. This form of manure can be regarded from two aspects—first its value as a direct manure and its influence on soil, and then its value in preventing deterioration.

To summarise: rather unexpectedly most fertilisers are likely to be available, though not in normal quantities, and prices will be high. Both factors call for substitutes for purchased fertilisers. The best means of getting over the difficulty is a wide extension of the use of leguminous plants grown either in the tea areas or on waste land, and secondly an appreciation of the fact that almost everywhere there is a vast store of waste material which can be converted into a valuable manure. It is wasteful to manure tea until it has recovered fully from pruning, and the best responses from manure will be obtained in unshaded areas with a full cover of productive tea. These latter will show highest rates of deterioration if nothing is put back. For Tea which suffers periodical checks e.g. in Helopeltis areas, purchased fertilisers, reasonably used, have an added value.

The Department is endeavouring to keep in touch with firms supplying manures, and will be glad to advise planters as to which manures are available and represent the best value for money, consideration being given to cost per unit and other factors.

This is, above all, a time for good 'farming', so that deterioration of plants and soil can be reduced to a minimum.

RUBBER IN THE BUILDING INDUSTRY

While the most obvious building use for rubber is in flooring, a full list of the possibilities would fill at least a page of small type. Starting at foundation level the first application would be the rubber composition dampcourses, while the halyards of the flagstaff at the top might quite well be rubber impregnated so that their weather resistance was improved. Between these two levels its applications vary from the small fittings such as door stops and chain pulls to the more structural aspects such as rubber roofing compounds, waterproofing solutions for damp walls or rubber mats for the insulation of machinery or floors, not to mention the various adhesives for fixing tiles and other materials, and the very large field of electrical equipment employing large quantities of rubber for insulation purposes.

1. *In Construction.*

As a means of providing a good key for rendered finishes on concrete walling, or for producing a texture which will allow the concrete to be left untreated, rubber has been widely used as a form lining, and has a reasonably good life. Specially shaped strips or tubes are tacked to the inner face of the shuttering, and remain embedded in the wall face when the shuttering is struck. When the rendering is to be applied the rubber strips are flexible enough to be easily removable and an undercut groove is left to provide a key. Used in sheet form as a shutter lining rubber can be made to produce a light texture in the wall face and thus save expensive bush hammering and other treatments. The various tars and bitumens used for waterproofing purposes often contain a certain percentage of rubber, while latex is also used as a binder for asbestos and other acoustic materials. For decorative plaster work where there is a considerable amount of repetition it is often worth while to make a rubber mould, which will last a great deal longer than the more usual gelatine type.

2. *As a Flooring Material.*

From the point of view of the user perhaps the greatest advantage of rubber flooring is its high resistance to abrasion. Under standardised tests rubber comes out very nearly top of the list with only a few materials such as vitreous tile above it. Nearly all technicians concerned with the rubber industry will readily admit the laboratory tests do not always give reliable results, but in one bathroom in this country there is a piece of rubber flooring which has been walked over by at least six million people, this figure being authenticated by the fact that the rubber in question was first used at the turnstiles of an international exhibition. Rubber manufacturers claim that, under normal conditions, a good quality rubber floor, properly laid, will last for anything from twenty to forty years, and that though the initial cost may be somewhat higher than for other coverings, rubber will show a saving over a period of years. For the architect the chief advantage of rubber is that it gives him complete freedom to design the sort of pattern he wants, and that colour variations are almost unlimited. Although it is obvious that a floor which consists of a uniform area of some standard colour will be cheaper, there is no practical limitation in pattern. Intricate curved shapes and narrow strips of different colours naturally demand greater skill in laying, and there will probably be a larger amount of cutting to waste, but, given good workmanship, there is no reason why a floor laid in the most complicated pattern should ever lift in use. Reliability depends not only upon skilled laying but also upon the sub-floor, which must be firm, level and dry. Rubber should never be laid direct on screeded concrete floors in direct contact with the earth; at least half an inch of asphalt is necessary for damp proofing. Wood and jointless floors are quite suitable provided that there is adequate air circulation beneath them, and the same applies to open concrete floors, where the screed should be three to one finished smooth with a steel trowel. Old boarded floors, provided that the surface is smooth, are better than new boards which may be liable to warp. Uneven floors, if they cannot be levelled off with a planing machine, should be covered with plywood or laminated board screwed to the old floor.

A typical specification for solid rubber flooring, drawn up with the approval of the India Rubber Manufacturers' Association, suggests that the minimum thickness of the rubber should be three-sixteenth inch for general purposes and one-eighth inch for light duty. 'The rubber used should be uniform in composition, free from ground vulcanised rubber or other forms of ground waste, with a minimum content of 25 per cent. by volume of high grade new rubber.' This is not an absolutely first grade specification. but it at least ensures a standard which will prove satisfactory in use.

Apart altogether from questions of durability, rubber has definite advantages from the point of view of cleanliness and silence. Its smooth surface cannot harbour germs or vermin, it does not absorb moisture, and it can easily be cleaned with soap and water, while for hospital use disinfectants can be safely added to the washing water. Various special cleaning compounds for rubber floors are on the market, most of them perfectly satisfactory, but ordinary soap and water is probably the simplest method. If the traffic on the floor is not too heavy the rubber may be kept polished, though it is essential to avoid any polish containing turpentine which will make the surface sticky and will ultimately cause the rubber to perish.

Apart from the sheet rubber floors, other types such as sponge and plastic rubber are available, while it is not unusual to find combinations with other materials such as asbestos cement, which can be used to form the rigid core of a rubber-covered tile. Sponge rubber carpeting is useful if an even greater degree of resilience than ordinary rubber sheeting is needed. Most of the sponge carpets on the market have an upper skin of tough rubber sheet with a sponge rubber backing, the thickness of which can be varied within wide limits. Another type of carpeting is made with the same surface but with a backing made up of rubber and wood fibres. As an underlay for ordinary carpeting sponge rubber is widely used, and here again any necessary thickness can be obtained, while a similar underlay is also made from the whisked-up latex used in upholstery work. One other aspect of rubber as a flooring material should be mentioned here. In the ordinary woven carpet a sizing compound is used; if rubber is used for the same purpose this has the effect of locking the weave and making it impossible for the pile to pull out. Thus the carpet forms its own selvedge and needs no binding or sewing whether it be cut on the straight, curved or diagonally. The carpet can then be joined with special tape or strapping in such a way that the joint is almost invisible, and it is thus possible to obtain broad loom effects in any size or shape. Intricate patterns can be laid and any section which has suffered excessive wear can be cut out and replaced with a minimum of expense. This and other types of carpet can also be fixed to the floor with one of the rubber adhesives.

Rubber finishes can also be applied to staircases, and give a comfortable non-slip finish. It is important, however, that ordinary sheet rubber should not be applied to the staircase like a carpet for it will inevitably crack at the sharp bends where treads meet risers. Specially shaped units should be used with the tread and nose piece combined, with a separate flat strip for the riser. This method also allows any worn tread to be replaced, Wall coverings are treated in much the same way as floors, except that the sheeting required is considerably thinner. It is sufficiently flexible to be bent round corners and window reveals and no particular difficulties crop up in practice.

3. *As a Sound Insulator.*

The sound insulating properties of rubber flooring have already been referred to, but the same material is used in a multitude of ways, not only to prevent sound from being produced (rubber tyres on carts and trollies, rubber rims on dustbins, etc.) but also to prevent it from being transmitted throughout the building. Sub-floors floating on rubber buffers considerably reduce the effects of impact noises, lift motors and other machinery is mounted on rubber pads, while transmission of noise along pipe lines can be prevented almost entirely if a sufficiently long length of rubber hose be inserted. About three feet would be required for an eight-inch pipe, and it is interesting to note that the insertion of a rubber washer between pipe flanges make no appreciable difference to the sound transmission, even if the bolt heads and nuts are also provided with washers. A certain amount of sound is also liable to penetrate through cracks round doors and windows, and the familiar draught excluding strip will also serve to keep out noise. Where windows overlook a busy street the glass may be set in rubber channelling to reduce its rigidity and consequent high sound transmission.

4. *For External Use.*

During the past few years much has been said in the popular press on the subject of the rubber road as a solution to the noise problem and to prevent damage to old buildings from traffic vibrations. Although the cost of rubber for this purpose is relatively high it seems possible that the cost may be offset by its exceptionally long life. Some difficulty was experienced in the early days as the blocks were inclined to creep under traffic movements, but this has now been largely overcome. Three sections of road are to be seen in London, one in Thurloe Place, one in Lombard Street and the third in New Bridge Street, while other stretches have been laid in Edinburgh and Glasgow. Apart from silence, the rubber road has the advantage that it is dustless and does not need watering, sanding or gritting, while its smooth surface makes it easy to keep clean. For entrances to shops, courtyards to flat blocks, and flat roof playgrounds rubber paving is as suitable as it is for internal use, while rubber-tar compositions are used for lining swimming baths. A comparatively small use is in expansion joints for outside concrete paths.

5. *For Upholstery.*

Rubber for upholstery and mattresses is of four different types, latex sponge, rubber sponge, rubber treated hair and air filled cushioning. In the first three types the material can be made to any shape and is quite easy to fix. The shapes of the air containers are comparatively limited, and they need rather more finishing and covering, but they give a very considerable degree of comfort and are useful if there is only enough space for a small thickness of upholstery. In public buildings and transport vehicles rubber has certain marked advantages for the owner, for with the more usual spring seating there is the danger that litigous passengers may have their clothing torn by springs projecting through worn upholstery. Apart altogether from considerations of extra comfort it is a considerable advantage to have a material which will not harbour vermin of any kind and which can easily be disinfected.

It was stated earlier in this article that the technique of moulding rubber products direct from the latex had only recently been developed.

In this process a small percentage of alkali is added to the latex to act as a preservative and the water content is reduced centrifugally from about two-thirds to about a quarter. This is done before the latex is shipped to this country. To make latex sponge the appropriate vulcanisers and compounding agents are added, with the addition of others which stabilise the foam into which the mixture is then whipped. This mixture is then poured into moulds and vulcanised by placing the moulds bodily in tanks of hot water. Any shape and thickness is possible, and the resilience may also be varied in different parts of the same unit. Various standard shapes are kept in stock, but the delivery of special shapes to pattern does not take very long.

6. *Other Uses.*

'Other uses' covers such a multitude of applications that it is only possible to give a general idea of the extraordinarily wide field in which rubber is now used, even in the building industry: waterproof curtains for showers, rubber tops for tables and counters, lavatory seats, rubber-covered plate racks, paints, non-slip devices for carpets and rugs, baths and basins, sink linings, sponges, shower heads.

7. *The Future and Synthetic Rubber.*

No consideration of the future of rubber can afford to ignore the possibilities of synthetic rubber, which has now reached a stage where it is definitely a practical proposition. Natural rubber is a tree crop and not an agricultural product. Provided that enough land and seed are available annual crops can be increased to meet next year's demand, but with the rubber tree at least a five-year plan is required. The intense national feelings of the past few years have stimulated the production of synthetic rubber to a considerable extent, and there is also the argument that factory production enables the supply to be more closely adjusted to the demand. During the last two or three years the daily press has maintained a continuous derision of the German attempts to produce synthetic rubber, and has suggested that it is not only an extremely expensive product but that it is almost useless as a substitute for rubber. Both these statements are definitely false, for the Russian Sovprene, the German Buna rubbers and the Neoprene evolved by I.C.I. and Dupont in America all have certain very marked advantages over natural rubber, though it must be admitted that they are more expensive. Of the three synthetic rubbers listed the only one available in this country in any quantity is Neoprene, and this material shows a higher resistance than natural rubber to heat, oils, sunlight and corrosive chemicals, while it has a smaller permeability towards gases and a lower water absorption. So far from being a failure, synthetic rubbers are already used in a number of aircraft engine parts where natural rubber would not stand up to the conditions. Most important of all, synthetic rubber does not support combustion.

In spite of the fact that the I.G. Dye Trust in Germany has produced synthetic motor tyres with anything from 10 to 30 per cent. greater resistance to abrasion than natural rubber, it would be ridiculous to pretend that the era of natural rubber is at an end. Synthetic rubber is a new material which has certain definite advantages over the material which it imitates. Its development will no doubt lead to new types of rubber which will have characteristics far beyond the ideas of the present rubber manufacturer. Synthetic and natural rubber are complementary materials, and, instead of finding new uses for an already existing material, it should be possible to produce a rubber to fulfil a specified set of conditions.

—*The Architectural Review*, November 1939.

MALARIA CONTROL ON TEA ESTATES

The results which have been obtained by the Tea Industry in India during the comparatively short period of eight years are remarkable and a great tribute to the work of the Estate Medical Officers, Superintendents, Managers and Planters. They are also a tribute to the Ross Institute, which has been primarily responsible for making malaria control a routine measure on many estates. It has been proved by many responsible medical officers beyond argument that the control of malaria is not only possible but is an important economic factor in reducing the costs of running an estate.

The India Branch of the Ross Institute today consists of a Principal, Indian assistants and research centres, subsidized by the Ross Institute. But, in addition, a large group of medical officers and planters are working in close association with the Ross Institute; they are, in fact, if unofficially, a part of the Ross Institute's organisation and an essential part. Progress started with Dr. G. C. Ramsay's original work at Labac, which indicated the lines on which malaria could be controlled economically in Assam as in Malaya. To enable his work and knowledge to become available to the whole Indian Tea Industry, the branch was founded in 1930 and the full-time services of Dr. Ramsay obtained. The Branch opened, equipped and subsidized a number of field research laboratories in different parts of Assam and Dooars, under estate medical officers, who readily gave their voluntary services to supervise the work. These centres were not only of great value to the Institute and to the tea estates in the prevention of malaria, but they were also helpful to the medical officers in solving problems in connection with other diseases.

The tea industry owes much to Dr. D. Manson, Dr. G. Fraser, Major C. S. P. Hamilton and Dr. G. C. Harrison, who have been indefatigable in advancing knowledge of the control of malaria and other diseases in Northern India tea gardens. Southern India was not overlooked, and we are also indebted to Dr. J. E. Measham for organising the first Ross Institute Field Station in Southern India. This was followed by other research centres in Southern India, and we have had the valuable assistance of Dr. P. K. Govindan Nair. There are many other doctors in Assam whose co-operation and help have been of great value, especially Dr. F. C. McCombie, Dr. B. A. Lamprell, Dr. G. G. Terrell, Dr. G. Macdonald, Dr. H. C. Berlie and Dr. W. N. Stirling.

Reports are submitted, either direct or through Dr. Ramsay, to the Ross Institute in London, for our information or for our comments. Reports are sent not only by doctors throughout the tea districts, but also from Superintendents and Managers.

In the chief Field Stations it was possible to train a staff of Indians as malaria surveyors and laboratory assistants who would be absorbed by the estates to assist in the control of malaria. The number of Indians trained in this work by Drs. Manson, Fraser and Measham and others now exceeds 400. The majority of these are employed by the tea industry and are on the pay-roll of estates. Industries outside tea also employ Indians trained at the Ross Institute centres.

The co-operation of the individual planter is of primary importance. Unless the planter himself is interested in the control of a disease and realises that it is just as necessary for him to have a healthy labour force as it is to have healthy tea bushes, malaria control work cannot succeed. To deal with this side of the work an annual Malaria Control Course for Laymen was started at the Ross Institute in 1929, when about a dozen attended. It is estimated that over 1,000 persons have attended the course since it began, and that 590 of these were planters. This year, as is detailed later in this report, the attendance was 222, of whom 120 were tea planters from India. The course is free.

During the past eight years Dr. G. C. Ramsay has visited practically every tea estate in India, many several times, and the demand for his services has been so constant that the time he has been able to spend on individual gardens, by force of circumstances, has been limited. Subscribers have also asked him to help in other directions, which has resulted in useful work being done in certain sugar districts, in jute mill areas, cotton ginning factory areas, and on various mines in India. By 1937 it was considered desirable to relieve Dr. Ramsay of as much administrative work as possible by reorganising the Branch. It was felt that there were many advantages to be obtained by placing the work of the Branch as a whole, and the arrangement of Dr. Ramsay's visits to estates, under a Committee.

The Control of Malaria on Estates.

Dissections of thousands of mosquitoes at various research centres have confirmed Dr. Ramsay's findings at Labac that the only anopheles mosquito we have to control in the Dooars and Assam is *A. minimus*. The possibility of other carriers is not overlooked, but so far our control is directed against the one species *A. minimus*. In Southern India *A. fluviatilis* is the principal carrier in the Anamallais and Meppadi areas. In the Peermade district two species have been incriminated, *A. fluviatilis* and *A. culcifacies*. Having found the species responsible for carrying malaria, our efforts have been directed against the breeding places of known vectors and other species are ignored. This is known as 'species sanitation' and is the most economical method of dealing with malaria in settled populations.

It was known in Malaya as far back as 1909 that certain malaria carriers could be controlled by the preservation of dense shade. In Assam, Dr. Ramsay demonstrated that *A. minimus* could be controlled by the growing of dense shade over channels and streams and in swamps. Where this can be done it is one of the cheapest methods of control. The shade plants mostly grown in Assam are *Duranta*, *Hibiscus*, *Basak*, *Lantana*, *Eupatorium*, *Tarapat* and *Bamboo*, and in Southern India, in addition to *Tarapat* and *Duranta*, leafy plants such as *Nilgiri Weeds*, *Wild Camphor* and *Wild Cardamom* are being used. Other methods of control are employed according to circumstances, such as oiling, Paris Green, flushing, draining, vertical draining, stone packing, oil booms, shading the edges of tanks, etc. Many experiments have been made with drugs. Prophylactic measures by drugs give only temporary results and are resorted to only in exceptional circumstances. Where the breeding places of the mosquitoes are properly controlled the use of drugs, except as treatment, is unnecessary.

—*Extract from the Annual Report for 1938-39 of the Ross Institute.*

CORRESPONDENCE

Dear Sir,

In case you are running short of Tailpieces, perhaps the following story (which I got straight from a Distinguished Spiritualist who assures me that he got it direct from his Astral Body while it was lurking near the entrance to Heaven the other day) might pass the Censor?—

A Catholic Planter presented himself at the Heavenly Gates and introduced himself, with considerable misgivings, to St. Peter.

St. Peter, who was in a chatty mood, told the Recording Angel to fetch his Book; and, in the interval, addressed the Planter as follows:—

'I don't suppose you are feeling particularly happy, my young friend: but cheer up; far more planters have gained admittance here than you would imagine. . . . Strictly between ourselves, we have rather a soft spot for planters, to tell you the truth. . . . It's a lonely life (we take that into consideration, of course); and we find that, apart from a tendency to wildness, the average planter has much to recommend him. . . .' Turning over the leaves of the Book which the Angel had brought him, St. Peter looked up and remarked with obvious pleasure:—'At any rate you seem to have been most punctilious in keeping Friday as a day of abstinence. . . . Most gratifying. . . .'

At this the Planter, true to his Public School tradition, fingered his Old Purgatorian tie, blushed a little, and replied:—'As a matter of fact, Sir, I shouldn't have been given any credit for that at all. You see, my "Boy" used to cook for me, and he-er-jolly well saw to it that I kept Friday and he kept the mutton!'

Owing to atmospherics, the Astral Body found itself out of earshot after this; but it told my spiritualistic friend that it distinctly saw the celestial Gates close on the right side of the Catholic Planter.

Yours, etc.,

'JEFF'.

SOUTH INDIAN TEA RE-EXPORTED FROM CEYLON

During the month of December 1939

Destination	*Lbs.*
United States of America	449,468
Continent	39,255
Australia	385,917
Other Countries	103,010
Canada	370,468
Total	1,348,118

MYSORE'S PROGRESS

The following is the text of an address given at Belur by Mr. K. T. Seshaiya, on 29th December 1939, to Sir Mirza Ismail, Dewan of Mysore.

May it please you, Sir, our esteemed Dewan Sahib:—

It is indeed to me no small honour that it has pleased you to extend to me the privilege of welcoming you here to my residence and the proverbially frugal fare of a farmer, which practically is my role in life after I settled down in this most beautiful part of our country, with the completion of my academic career.

You, Sir, have just now returned to us after performing the pleasant function of declaring open the Congress Swadeshi Exhibition, which bespeaks the great regard and esteem in which you are justly held by that great organisation, the Indian National Congress, which is at present led by the greatest living men on earth and which is intensely devoted to the achievement of the national regeneration of India. Further, it is indeed more than casual as about three months ago you were similarly invited to Mangalore to take part in another function, under the auspices of the District Board of that District, working under the supervision of the then existing Congress Government in Madras. Well may other sister Indian States envy us for this marked appreciation of the great strides we have made in Mysore under your able lead and guidance. You have, Sir, thus gained recognition of the Indian National Congress, and equally successfully won a marked recognition from our Paramount Power as evidenced by their frequently sending the scions of the ruling families of the other Indian States for training here in the art of administration; you have also very deservedly gained the regard and esteem of our beloved, saintly, and far-famed Ruler and also of the great bulk of the people of this country, which expressed itself, in no uncertain manner, through the last Representative Assembly, when it almost unanimously passed the Public Safety Bill and placed it on the Statute Book, but true to the unfortunate characteristic of some of our people, we must perforce have a rift in the lute, which is supplied to us, since a couple of years, by the activities of the so-called Mysore Congress, which is endeavouring to take its parentage from the Indian National Congress, while at the same time, that august body is looking askance at the claim that is so zealously made by her name-sake in Mysore and wondering whose that child is.

It is now a little more than a year since I had the honour of inviting you to my village home, and in this brief space of time momentous changes have taken place, both within and abroad. Last September we were on the brink of war but were saved its horrors by the admirable patience of Mr. Chamberlain at Munich and little did we then expect that the war was averted only temporarily. Repeated broken promises of Hitler and his wanton attack on Poland gave no other alternative to Britain and her brave allies than to defend their just rights by resort to the only method which Hitler and his friends understood, which was recourse to arms. I need hardly mention where our sympathies are in this conflict, which has begun to devastate Europe and has its repercussions all the world over. The moral issue is in favour of the Allies and the people of this country, to whom the spiritual values have always the greatest fascination, wholeheartedly extend their hand in support of Britain and her friends. The colossal expenditure over the war is almost unimaginable to us; the total annual revenues of our State would be insufficient to meet the cost of war even for a single day; but we can, however, to some small extent, extend our support by the increased activities of our numerous Industrial Concerns, which you, Sir, have so successfully built up in this country.

Turning to our own domestic matters, the Reforms have been announced, which, if we but consider the tardy progress we have made in the self-governing institutions, such as the Co-operative Societies, Municipal Councils and District Boards, takes the country quite a long way forward in associating her people with the day-to-day administration of the Province. I shall not, however, waste your time in touching upon the activities on the 'Mysore Congress'. In the first place, the Representative Assembly has given a final verdict on them in its last session, as I touched upon before, and has thereby covered itself with glory as a responsible body, that first and foremost stands for the maintenance of law and order. No Government worth the name can refuse to take up the challenge in the only manner open to them, if the present political agitation continues to take the form of physical violence, which is what it really is, deliberately to defy the law of the land. Whatever may be the ethics of the Civil Disobedience Movement, with which I shall not concern myself tonight, it is to my mind wholly out of place in Mysore. What example and precedent are created by such a wilful violation of law by every irresponsible section of the people, with a slogan of their own, communal or otherwise, that may spring into existence any moment, you can yourselves readily imagine. This subversive method can only lead, under the false lure of martyrdom, to anarchy, civil strife and organised hooliganism which should sternly be put down by the strong arm of the State. Even in England from where the ideal of Responsible Government is borrowed you have never heard of resort to civil disobedience to enforce the pet theories and ideologies of any section of her great people. Fascism, about which we hear so much in other countries, finds no fertile soil in Britain; and may I ask why this is not taken due notice of by the sponsors of civil disobedience movement in Mysore? What Britain is to a Britisher, Mysore is to a Mysorean. The advocates of the civil disobedience in Mysore are ever silent when inconvenient questions are put to them. The Second Member of Council, in his memorable speech at the recent Co-operative Conference in Mysore, deplored how the true co-operative ideal has not yet spread among the people, and how the movement as a whole had, so far, failed to fulfil the expectations formed of it when it was introduced in Mysore as long back as 1905. The 'Mysore Congress', who have given certificates of fitness to the people of this country for being granted full and immediate form of Responsible Government, never ventured to contradict or contest the implied charges of unfitness to perform any constructive work in team spirit; so also have they been discreetly silent when time and again the practice of the same persons holding key appointments in the self-governing institutions, in the name of Democracy was denounced, as betraying want of appreciation of democratic ideals by the electorate. With so many years of Municipal training, one notes with sadness the absence of what I may call the sanitary conscience in the people at large, and likewise sad has been the story of the Village Panchayats, unless the Amildars bestir themselves and set them to some activity; when readily they are taken to task for interfering with their autonomy, while left to themselves they either generally in most cases stagnate or the funds get into the control of a small clique in the village, which do not then bear scrutiny of any independent audit. In spite of all these proofs of unfitness of the people at large for Responsible Government, I am sure neither the Government nor those of us who stand for law and order will mind the propaganda about Responsible Government, but what is really condemned by one and all, however, is the persuasion to resort to civil disobedience, as if it were martyrdom to do so, which, however, is the very antithesis and negation of any and every form of Government or ordered society in any country. Even the Congress Government at Madras had to use 'Repression' to quell civil disobedience started by anti-Hindi protagonists, thus demonstrating that the defiance of the duly promulgated laws of the land can be dealt with only by the strong arm of the State. Before I leave this subject, I would prefer to call your attention to the composition of this body, which suddenly came, as it were, from the blue, a couple of years ago and the equally abrupt metamorphosis of some of the leading lights thereof from rank communalism to nationalism of the deepest dye. It would be an interesting and instructive study in methods of modern propaganda if an analysis and classification of the rank and file of the political prisoners is made and published, based on property and educational qualifications and the classes from which they are drawn to defy the law of the land and court arrest.

The need of the hour in Mysore seems to me to be that we should strive for economic betterment, which, except in the case of Sanyasins of every religion, has, as it seems to me, everything to do with the development of those moral qualities, which make a people great and prosperous. The failure of the self-governing institutions I have referred to in the earlier part of my speech is, to my mind, very largely due to the unhappy and progressive economic deterioration of our people. Caught in the whirlpool of economic forces, under the sway of the ever-changing economic theories over which Britain could have no full control (all that no doubt due to the conflict between the 'Haves' and the 'Have-nots', which relation is worsened by capitalism of the present machine age, which has thrown millions of persons out of employment), we in Mysore who are still very largely engaged in agricultural pursuits suffered from the ever increasing downward trend in the prices of our agricultural products since 1929, until we reach the stage when the land ceased to be a profitable proposition for cultivation and but for the enormous and strenuous endeavours of our Government at the industrialisation of the country, the position of the finance of the people and of the Government would have been much worse. You, Sir, saw with a remarkable insight that in this turmoil of economic and political forces the hope of even sustaining ourselves financially was to start industries which by your characteristic drive have all been brought to a great success; even the latest of them, 'The Chemicals', has much advanced in its share value in the market. I appeal to the public-spirited men of the country to bestir themselves and co-operate with the Government in bettering the economic condition of the people. We must all pull our weight together and inaugurate a prosperity drive throughout the State. The Government have put into our hands the necessary agencies. They have to be worked with intense zeal and earnestness. How much really can be done, if the Co-operative Credit Societies are rejuvenated from the torpor and stagnation that has overtaken them; how much the public-spirited people can help us farmers, if they willingly bend their energies at developing the marketing board for the several commodities that the Government have brought into existence! How much scope indeed there is for them to build up and construct and improve the lot of their brethren who are economically hit hard. They can engage themselves in activities under the Debt Conciliation Act and the Rural Development Scheme. I do not, however, wish to tire you, gentlemen, by further cataloguing the numerous other directions in which they can help us and become indeed by actual constructive service the genuinely-accepted leaders of the people.

I am afraid I am rather too long in my speech but my only apology is the strenuous times in which we are living. I have one word more to say and that done, I wish you good-bye. It is the prerogative of the farmer all the world over to offer a simple gift such as a flower or fruit as a token of his esteem to his honoured guests and this practice at this time of the year carries with it additional weight and emphasis as we are entering the New Year. I offer you, gentlemen, in place of the flower or fruit, as a villager's New Year gift, a vision of the future of Mysore, a country which has given us and our children our birth and has nurtured us. As it is, Mysore can give so many object lessons even to British India. The great Chief Commissioners from Sir Mark Cubbon to Col. Gordon laid the foundation of the administration of this country upon which Indian talent has improved to suit the needs and genius of our people. What do we find as a result thereof? The best that these two races can give has been slowly and surely built into it and we have now a wonderful edifice, which is the envy of the whole of India. Britishers are living in our fold as equal citizens with us, owning allegiance to the Throne of Mysore, in planting life, in gold mining, in mercantile line and in Government service as well. We have on that account no political problems that face us; but we live here as great friends and good neighbours each helping the other according to his opportunities. I am sure, gentlemen, we have scored a point in this matter. So also is the admirable concord between the different religions and creeds in Mysore. We have had no communal problem worth the name excepting what was manufactured in the cities of the State some years ago, which under your wise handling died an early death. We are moreover a homogeneous people, having for all practical purposes a common language and a common tradition. I am sure that we will always continue to have the blessings and the goodwill of the Paramount Power, as we owe the foundations of our administration, as I said before, to them and that she will therefore look upon us as an adult child of hers always wishing her well and being helpful to her according to her needs. With the subsidy completely remitted, I visualise the vision of the borders of Mysore generously extended by our Paramount Power in appreciation of the achievements of her ward that has come to adulthood, so that the unification of Karnataka so ardently desired may be an accomplished fact, with the economic autonomy granted to her to order her own economic affairs according to her needs, but withal, that freedom and autonomy being in perfect consonance with Imperial obligations. I visualise also the early grant of a sea-coast town to improve her trade and commerce, so that Mysore may continue to present to the world a picture completed by the combined labour of the British and Indian statesmen a source of ever increasing pride to Great Britain. This enlarged Mysore will, as heretofore, continue to be helpful to England to the full measure of her capabilities and resources, free from political problem of any kind.

It is indeed fortunate that we have in these momentous times a well-tried Prime Minister, Sir, in you. Particularly for a country whose resources are yet to be developed, continuity of policy is necessary and it is in that spirit that the three great Chief Commissioners were permitted to serve Mysore for a long time, although then as now Governors and Viceroys held office for a period of only five years. With these distinguished precedents before us, it is our ardent hope that the present Dewan Sahib will kindly serve Mysore likewise. I give the country the cordial assurance that he will never be found wanting to develop Mysore to the full height of her greatness. Let us then be united, for our common good, all sections of our people being bound by the common ties of loyalty to the Throne of Mysore, and in zealous and intense manner, undertake to co-operate with our Government, which is, after all, ours and ours and ours, in the prosperity drive, so that there may vanish penury and want, poverty and hunger, for ever and for ever, from this dear country of ours, under the lead of our beloved Sovereign, His Highness the Maharaja of Mysore.

FANTASY

The Marshal called his Magnates up, and wagged a podgy finger,
'If you do not produce enough, we Nazis will not linger,
'Nor will we even hesitate to give you our "protection",
'If it appeared that you should be suspected of deflection.'

'Herr Thyssen, (devil take the cur and mark him for damnation)
'Should be a solemn warning to you servants of the nation.
'Although the dog has got away to some far distant country,
'We have a warrant out, and so, he'll pay for his effrontery!'

'The thing I want you all to do,' the hefty Marshal thundered,
'Is build a mighty catapult.' His typist must have blundered!
But no, the worthy man went on and entered into detail,
The secret weapon now was out for everyone to retail.

The catapult, or so it seemed, was of immense construction,
It hurled its missile many miles to do its fell destruction.
But when the treatise came to close it didn't prove so futile,
The Marshal—so the paper read—would be its first projectile!

'Whatever happened after that?' Are those the words you said?
Thats why there is no German man who has not lost his head.

GNIPPIT.

AVERAGE PRICES OF COMMON TEAS—DECEMBER, 1939

	Wholesale (*Selling prices of dealer to retailer*)			*Retail* (*Selling prices of retailer to consumer*)		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	6	0	8	2
Tanjore	0	8	9	0	9	5
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	9	0	9	3
Tiruvarur	0	8	7	0	9	3
Pudukottah	0	7	10	0	8	6
Karur	0	8	4	0	9	5
Erode	0	8	2	0	8	8
Tiruchengodu	0	8	0	0	8	6
Namakal	0	8	4	0	8	10
Salem	0	8	1	0	8	10
Dharmapuri	0	8	1	0	8	7

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 20th January 1940 were:—

Rubber, including export licenses	53.50 cents a lb.
Rubber Export Quota	16.00 cents a lb.
First quality Rubber alone	37.00 cents a lb.

PRESERVATION OF TEA CHESTS

Tea boxes are very largely imported from European countries and it may be difficult to get supplies. Some tea companies have taken the opportunity to have a stock that may be expected to last for some time but in the course of storage many of the plywood panels are apt to become damaged by borers. Under present uncertain conditions it is very necessary to prevent as far as possible this loss. This can be done but calls for a great deal of careful attention. The beetle lays eggs during the rains in the edges of the panels and the first protective measure is to prevent the beetle, which is of a moderate size being about one inch long and can consequently be easily seen, from reaching the wood. This can be done by storing in an insect-proof godown, all outlets being covered with mosquito netting so as to prevent the beetle from entering the godown. This is the most efficient precaution but in many cases the godown in which the box materials are stored has wooden beams and the insects, as borers, are already in the wooden parts of the godown from which the beetle will eventually emerge inside the godown. Against this the netting would be no protection but would only help to keep the beetles within the godown.

In such cases it is almost impossible to prevent the beetle laying eggs and the only possible prevention is to prevent the borers after hatching from the eggs damaging other shooks than the one on which the egg was laid. This can be done only by turning over and examining frequently, once every three weeks, every panel and removing from the godown those that shew any sign of the borer being at work. If left undisturbed a borer can work through several panels. It is the thorough examination of both sides of every panel every few weeks during the rains up to December that requires to be carefully supervised.

—*Extract from the address by Mr. P. H. Carpenter, Director, Indian Tea Association Scientific Department, Tocklai, at the Annual General Meeting of the Assam Branch of the Indian Tea Association on 11th November 1939.*

TEA QUOTA PRICES

The Quota prices ruling in South India on 1st February were:—

Tea Export Quota	... 6 annas 6 pies per lb.
Internal Market Rights	... 1 pie per lb. (Nominal)

In Calcutta the market for Export opened at 6 annas 9 pies per lb. and advanced to 7 annas per lb.

Internal Consumption Quota was quoted at 2 pies per lb.

D. J. McFARLAN

We regret that owing to a misunderstanding in the press Mr. Langley's name was attached to the obituary in our last issue of the late D. J. McFarlan. It was neither Mr. Langley's wish nor our intention that his name should appear.—Ed.

MARKET REPORT AND PRICES

The Calcutta Market

(*Extracts from the Calcutta Tea Brokers' Association Reports.*)

Sales Nos. 29 and 30 were held on 15th, 16th, 22nd and 23rd January, 1940.

Few teas with pronounced autumnal character were available. Enquiry was much more restricted and the market lower. Tippy teas were only slightly easier, but all other kinds were from six to nine pies lower.

DESCRIPTION	Season 1939-40			Average on same date	
	Sale No. 29	Sale No. 30	Average to date	In 1938	In 1937
	As. p.	As. p	As. p.	As. p	As. p.
With Export Rights ...	12 8	12 2	11 5	9 10	10 9
For Internal Consumption:—					
Leaf Teas ...	4 11	4 5	4 8	4 0	4 2
Dusts ...	4 11	4 9	4 5	4 9	5 4
Green Teas ...	8 8	9 1	5 10	4 9	...

RUBBER.—London Rubber on January 29, 1940, 11 13/16d.

The Colombo Market

(*Issued by the Colombo Brokers' Association.*)

Average prices obtained (in cents.)

South Indian Tea

	Sales on Jan. 16 & 30, 1940
Achoor	75
Anei Erngal	74
Barham	75
Bengorm	98
Chembra Peak	69
Chenkara	74
Cheruvally	75
Chinnar	73
Deviview	94
Dunsandle	99
Dymock	75
Glen Leven	62
Glen Morgan	87
Heavenford	67
Isfield	78
Kadalaar	77
Kalasa	72
Kanniamallay	84/85
Karamalai	89
Kardoora	86
Kumbazha	75
Kurchermulla	66
Kylasanaad	68
Lockhart	92

South Indian Tea—(*contd.*)

	Sales on Jan. 16 & 30, 1940
Manalaroo	84
Malakiparai	82
Moongalaar	84
Mayfield	81
Nagamallay	76
Neelgri	67
Perrengoda	73
Pootoomulla	81
Pullivasal	79
Singara	1.04
Tuttapullam	70
Vagavurrai	89
Vellamalai	81
Wentworth	78
Yendayar	65

Rubber

	Sales on Jan. 11 & 18, 1940
Ribbed Smoked Sheet ...	56 to 58⅞
Contract Crepe ...	57 to 58⅞
Mottled Brown Latex Crepe	53 to 55½
Brown Scrap Crepe ...	51½ to 53

The Madras Market

Current on 2nd February, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

During the past fortnight Stock Markets in India have witnessed a very serious collapse. Since the market reopened after the Christmas holidays the general tendency has been hesitant and declines were recorded in most of the leading speculative stocks in sympathy with the fall in commodity prices. Whatever effect the Excess Profit Tax may have in actual practice the mere mention of it was sufficient excuse to bring about a sharp collapse in share values, and falls of up to 20% in value have been witnessed. At the time of writing the market closes above its worst but is still somewhat unsettled. It is significant that in contrast to the wide fluctuations in the share market Government Securities continue firm while there is still a very strong investment support for first class Fixed Interest Bearing Stocks.

Rubber.—Although the price of rubber has ruled very steady at little under 1*s.*, rubber shares have all recorded considerable losses. This is largely due to the complete absence of any buying support and not on account of nervous or forced selling. Cochin Malabars from Rs. 7 have sagged to Rs. 6-2 as., Malankaras have sellers at Rs. 38 and Kalpettas at Rs. 16. Tropical Plantations were offered at Rs. 16 with no buyers. Midlands were also easier at Rs. 4-13 as., and Thirumbadis at Re. 1-12 as., cum the final dividend of 7½%. The volume of business changing hands has been very limited and buyers have for the time being withdrawn their support.

Teas.—There is little change to report in this section, the general undertone remaining steady. Periakaramalais were offered at Rs. 18 with buyers at Rs. 17-12 as., after small business was put through at Rs. 17-10 as. Vellamalai Ordinaries were bid up to Rs. 9-10 as., with buyers over, while a line of Haileyburia Teas were offered at Rs. 18-4 as., at which price business was put through. Chembra Peaks were lower at Rs. 3 sellers. Planting Debentures have been in good demand and there were buyers for Vellamalai 7% Debs., at Rs. 104 and Ouchterloney Valley Debs., at par.

FORTNIGHTLY RAINFALL STATEMENT

January 7, 1940 to January 20, 1940—(Inclusive).

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty ...	N.R.	N.R.	106·66	...
3. Kallar B'dge	...	...	162·18	162·18
4. Koney ...	...	...	122·29	122·29
8. Twyford ...	·30	...	242·35	242·35
9. Pettimudi ...	...	N.R.	328·51	...
10. Kalaar ...	...	...	236·44	236·44
11. Chittavurrai...	...	...	41·46	41·46
12. Bodi'kanur ...	...	...	20·17	20·17
13. Cochin ...	0·07	...	131·21	131·28
14. Mooply ...	...	...	130·62	130·62
15. Pachaimallai	...	...	125·74	125·74
16. Mudis ...	...	...	179·59	179·59
17. Pollachi ...	...	...	33·06	33·06
18. Ropeway Waterfall ...	...	...	97 01	97 01
21. Kerala Estate	0·22	...	148·63	148·85
22. Naduvattam	...	...	118·33	118·33
24. Coonoor ...	0·06	...	48·60	48·66

Stations	First week	Second week	Prev. from 1-4-'39	Total
25. Kotagiri ...	0·07	...	56·46	56 53
26. Ootacamund...	...	...	55·71	55·71
27. Yercaud ...	...	...	72·00	72·00
30. Devarshola T.E.S. ...	...	...	77·58	77·58
31. Calicut ...	0·07	...	115·22	115·29
32. Kuttiyadi ...	...	...	191·73	191·73
33. Vayitri ...	...	...	151·16	151·16
34. Manantoddi...	...	...	83·97	83·97
35. Bilgiris ...	...	...	66·40	66·40
38. Pollibetta ...	...	...	61·18	61·18
39. Coovercolly ...	N.R.	N.R.	74·22	74·22
41. Kadamane ...	0·03	...	265·52	265·55
43. Merthisub'gey	...	...	99·02	99·02
45. Balehonnur ...	...	...	88·54	88·54
46. Mangalore ...	...	...	116·41	116·41
47. Madras ...	...	...	33·76	33·76

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

An interesting meeting was held at 'Glenview' on the afternoon of Wednesday 14th February, when planters had the opportunity of meeting Mr. Y. N. Sukthankar, I.C.S., the Tea Controller, and discussing the contract for the supply of tea to the Food Controller in the United Kingdom. The Association learned only on Monday morning, 12th February, that Mr. Sukthankar would be able to meet planters, and in the circumstances the attendance of about 20 planters was most gratifying. Mr. Sukthankar, while he made it clear that he could not speak with absolute authority on behalf of the Food Controller, very willingly answered the many questions that were put to him, and the meeting was obviously sincere in supporting the Chairman's thanks to Mr. Sukthankar for his visit.

Members will receive a full report of the proceedings in the usual way. A number of points, however, arose during the meeting which can be mentioned here.

The letter offering to sell tea to the Ministry of Food contracts to supply a definite number of pounds of tea, but No. 1 of the explanatory notes shows that the contract will be for a percentage of the contractor's export quota. The meeting seemed to be in agreement that it would be preferable for the open tender system to be adopted, whereby estates would be at liberty to tender exactly the amount that suits them. This point of view is being placed before the proper authority; there is general agreement that it is most unsatisfactory that estates should be asked to enter a contract blindly, without knowing either the export release for the year 1940-41 or the percentage of the exportable tea that will be required from each estate by the Food Controller. The view was put forward also that it would be more satisfactory if the agency house could be the contracting party where such an agency house controls a number of estates; this system worked well in the Short Term Contract and has such obvious advantages that it is hoped it will be adopted. Individual estates, of course, will still have the right of tendering direct.

The difference between South Indian and North Indian conditions as regards production was emphasised at the meeting; it was pointed out that in South India production goes on throughout the year, as compared with North India where the bulk of the production is between March and December. As a result, South Indian estates must reserve part of their quota for use in January to March each year. Strong representations have already been made by the Association that a contract based on the financial year April to March would be more convenient than a calendar year contract, but this suggestion apparently was not acceptable to the Food Controller in the United Kingdom. The arguments in its favour were again repeated at this meeting, and will again be forwarded to London in case the matter can be considered further.

Mr. Sukthankar stated that according to present information the total requirement from India under the contract would be 330 million pounds, of which 55 million pounds were being asked from South India; he confirmed that the Food Controller's requirements were intended to cover re-exports from the United Kingdom.

As regards the fixing of the basic price Mr. Sukthankar said that the arrangements contemplated were that estates would themselves calculate the price, and certify that this was correct; the Food Controller would have the right to demand documents in proof of the calculations. It might not be out of place here to emphasise that the average price realised during the three basic years 1936-38 is the price to be paid for teas under the contract as it stands at present; we learned recently that some planters believe that a fixed price of about 9*d*. per pound will be paid, and we would take this opportunity of making the position quite clear. The price will be based on the price each estate has actually obtained for its tea in the past; in the case of estates which have not previously shipped to the United Kingdom, the price will be based on the district average, provided the teas offered are suitable. The question of allowance for increased cost of production under war time conditions is also under consideration; the principle of such an allowance is accepted by the Food Controller, and details are being worked out.

TAILPIECE

The pathos of life was brought home to us recently by a man who plays a lot of bridge, but has recently been very unlucky. He was experimenting with an 'Autobridge' (of which he remarked that it gave him the only good hands he had held for months), and then reflecting on the numerous Culbertson publications, he said gloomily, 'Well, I suppose the Culbertsons have made so much money out of their books and what-not they can afford to play this damn' game for pleasure now.'

THE B. E. P. O. AND THE WAR

The following circular letter dated 1st January 1940 has been addressed by the British Empire Producers' Organisation to its Overseas Members:—

War has curtailed certain of the normal activities of the B.E.P.O., but has provided new opportunities for helping the producer. The number of the Organisation's supporters is undiminished, and we look forward with confidence to 1940.

Since the outbreak of war, the services of the B.E.P.O., as a consultant bureau or in any other capacity, have been offered to the Ministry of Food, the Colonial Office and even to the Ministry of Information. Our numerous contacts in London and Overseas and the wide experience, both collectively and individually, of your Council might, it was thought, be of considerable assistance to the Government, and serve to keep before the Government the point of view of the Empire producer.

These offers, which of course involved no expense to the tax-payer, were of considerable interest to the Government, but so far have not been accepted.

It is probable that the B.E.P.O., as the Organisation exclusively devoted to the interests of the primary producer, is better employed outside the official area, which would limit free criticism. To espouse the cause of the farmer is nearly tantamount to being 'agin the Government'. For instance, since September, considerable energy has been devoted to impressing on such authorities as the Colonial Office, the Ministry of Food, the Ministry of Shipping and Shipping Lines themselves, the importance of maintaining Empire trade in certain commodities, notably coffee, by providing punctual and orderly shipment of the annual crop.

The Tobacco Federation of the British Empire, our affiliated Association, has been particularly active in keeping before the Government the needs of Empire growers. Other points, such as the resumption of the publication of simple statistics for certain commodities, are under discussion.

Questions on the above-mentioned commodities have been asked in Parliament, in the interest of the Empire producer, and endeavour is made to keep the producer's interests to the fore.

The necessity for this is especially apparent at the present time: in the control of certain commodities consideration for the primary producer's welfare has been slight. There is some truth in the complaint that the retailer and the manufacturer can put up their prices, while the farmer, less articulate, sells his crop at an uneconomic rate.

Our Associations and Members point to the fact that the Government urges the Colonial farmer to increase and multiply and replenish the Empire's store, and in the same breath suspends its chief agent, the Colonial Empire Marketing Board, for the duration of the war. This body, regarded as the potential saviour of the producer, after a year's exploratory work, has in a night silently vanished away. With the advent of war the Board was presented with a golden opportunity to display to Government and people the vast resources of the Colonies, and to plan for the profitable future of endless commodities. The opportunity has been lost. It is true that the Economic Section of the Colonial Office has been enlarged and strengthened, but an 'internal' office cannot expect to rival the efficiency and scope of a semi-independent organisation.

One Colonial journal, distinguished for its force and lucidity, notes with concern 'a lamentable lack of commercial liaison between the Colonial

Empire and the British Government', and asks for 'a meeting of real representatives of the Colonies', to disclose to the Cabinet the full resources of the Empire.

This is plain speaking, but the charge is not unfounded and it is of the utmost importance that the question of Empire trade, and the grower's part in that trade, should, during the war, be subjected to even closer scrutiny than before. Increased consumption, Government purchase and the like will bring temporary relief to certain commodities, but the cessation of hostilities will again spell catastrophe, if the experiences of 1918 are any guide.

It is for the Dominions and Colonial Office and every Organisation devoted to the cause of Empire to study the subject of Empire trade. Britain's export trade, of vital importance in time of war, has never received proper publicity: publicity and propaganda are essential if we are to maintain and improve our status in foreign markets. The raw products of the Empire require similar treatment: the industry and energy, for example, of the German and American trade experts, who penetrate and capture markets abroad, might well be copied.

The control of commodities in the United Kingdom and its history to date will have been studied by Members of the B.E.P.O., in the world's press. London opinion is agreed that there is in most cases a clear case for control, and that the restriction of trade, with the inevitable disruption of production, machinery and distribution, has been justified. In the initial stages of control we witnessed a curious phase of misdirected official energy; the trades were consulted, but in an insufficient degree, but this has now been rectified. Government intervention in the intricacies of trade must be limited to light direction; the professionals alone can do the work.

Meanwhile we can say with absolute truth that, despite the vexations of black-out, rationing and evacuation, the morale of Great Britain was never higher: complete unity prevails, and the one object is to 'see the business through'.

I am empowered by the Council of the B.E.P.O. to remind you that the Organisation is prepared to examine any commodity question or to pursue any suggested line of investigation which is likely to promote Empire trade, and especially any problem local or otherwise which adversely affects the primary producer.

The Chairman, Council and Staff of the B.E.P.O. unite in offering your Association and all Members every good wish for the coming year.

TEA FOR AFGHANISTAN

It is learned on good authority that a strong demand for tea is expected in Afghanistan in the near future, and that buyers are likely to be willing to pay a good price.

The address of the Indian Government Trade Agent is Shahi Bazaar, Kabul. Exports of Indian tea to Afghanistan without export licenses are permitted under special permit, but the amount allowed to cross the land frontier under such permits is restricted. Particulars regarding the export regulations may be had from the Joint Controller for North India.

TEA MANUFACTURE FROM SELECTED BUSHES

Two years ago, in the Annual Report for 1937, a reference was made to a method which had been devised in the Biochemical Department for the manufacture of leaf gathered from single bushes. It was explained that the object of the method was to enable the question of quality to be tackled as soon as selection work reached the stage at which other factors besides yield could be taken into consideration.

The selection work of the Plant Physiology Department has now reached this stage and it is intended in this article to give a brief account of the activities of the Biochemical Department in assessing the quality of bushes selected as high yielders. Emphasis must be laid on the fact that the work is in its early stages and that this article is intended solely as a progress report provided for those people who have shown marked interest in this sphere of activities. Such inferences as are to be drawn from the matter are intended as food for thought rather than action. The few results available do not afford any means of developing a sense of proportion, as we have as yet no idea of the extent to which the more extraordinary types of bushes occur in our present fields.

The method used for manufacturing these small quantities of leaf will not be dealt with at any length, and it is sufficient to say that any quantity of leaf down to the bare minimum required for one Taster's cup can be satisfactorily dealt with. In order thoroughly to test the method, the leaf from four different bushes has been manufactured repeatedly over the past two years. A professional Tea Taster has examined the teas and the conclusion was that they maintained certain characteristics which would only be the result of bush type or jat. Sufficient confidence was thus engendered in the method of manufacture to warrant its application to an attempt to select for quality, from bushes which have been proved high yielders by the Physiology Department.

This confidence has so far been justified by results, especially since it has been found possible to forecast Tasters' opinion, with some considerable success, entirely on the basis of various observations made during the course of manufacture. In short, the behaviour of leaf uniform in botanical type is much more rational than the behaviour of the mixed leaf from the huge number of hybrid types which we have to deal with in present day commercial manufacture.

The variations of quality so far encountered have been little short of amazing, and few people can have realised the full extent of the heterogeneity with regard to quality which exists in the tea bushes now cultivated in Ceylon. In order to give a clear impression of the extremities of the variations so far encountered, a few types are described below in some detail. The numbers given to types described are only applied for the purpose of this article as so far we have not made any attempt to classify types of quality; it should also be clearly understood that at present there is not any reliable information about the relative proportions of these types in cultivation.

Type 1.—A non-fermenting type which remains green after the most severe rolling and does not show any sign of developing the colour of normal fermented leaf even up to the time when mould growths appear. When fired after allowing a standard period for fermentation, it gives thin worthless liquors.

A few of these bushes in any field will possibly spoil all infusions although some fermentation is induced by contact with juice from other actively fermenting types. The green particles observed in many commercial infusions, the elimination of which has been the object of so many experiments, may originate from bushes of this type. Biochemical investigations of this particular type have indicated the lack of the normal oxidase system. Peroxidase and ascorbic acid (Vitamin C) are both present.

Type 2.—A type in which fermentation does not appear to be very active under any circumstances. Three variations of this type have been encountered which become evident when fired after a standard period of fermentation.

(*a*) Giving poor liquors.

(*b*) Giving a good quality liquor.

(*c*) Giving a liquor with a distinctive greenish character.

The infusions of these teas are all poor although they may vary in brightness. Liquors are invariably thin but Type 2 (*b*) has notable quality and is remarkable for the association of quality with a poor infusion, a combination which at first puzzled the Taster.

Type 2 (*c*) is not so rational in behaviour as the others and it is not so easy to predict the Tasters' opinion from the observations made during manufacture. This type often has a green, grass-like 'nose', but sometimes, apparently owing to the presence of quality in the liquor, the Taster will class the liquor as above average although remarking on the greenish character. Most often, however, the greenish character of these teas is undesirable.

Type 3.—A type which ferments very rapidly and gives excellent infusions with coloury liquors after standard fermentation and firing. The main variations are:—

(*a*) Good quality.

(*b*) Poor quality.

Type 3 (*a*) represents a good all-round tea and is probably the variety which will eventually be chosen for clonal propagation. It is, however, possible that a mixture of Types 2 (*b*) and 3 (*b*) when quality and colour are outstanding might give a better liquor than any single clone of Type 3 (*a*). The problem may eventually arise as to whether we are to concentrate our energies on a good all-round type or on separate quality and colour types, should separate material which is outstanding with regard to these two characters be discovered during our investigations.

The presence of quality in Type 3 teas is evident during manufacture by reason of the 'nose' on the fermenting leaf. A good nose assuredly indicates the presence of quality, and conversely the absence of any marked aroma in this type enables one to predict that although infusion and liquor colour will be good, quality will be lacking.

In one or two cases a rather interesting variation of Type 3 (*a*) has been encountered where the aroma of the fermenting leaf is very marked in the early stages but disappears before firing which is carried out at the end of a period standard for all these experiments. Separate experiments are to be carried out with this particular leaf since the fermentation may be ultra rapid and constitute a type which would be called Type 4 in the series described above.

—*The Tea Quarterly*, December, 1939.

SHADE TREES IN UGANDA

AND THEIR RELATION TO THE CULTIVATION OF COFFEE AND TEA

When European estates were started in Uganda the crops planted were rubber, cacao and Arabica coffee. Little attention was paid to shade trees; the coffee was interplanted among rubber in order to give a return for a few years before the rubber trees were large enough to be tapped, while the cacao was usually planted among bananas, which provided shade for some time. Arabica coffee soon showed such promise that the crop was planted on a considerable scale by itself and was not used merely as a catch crop among rubber; and the question of shade trees became of importance in regard to the cultivation both of Arabica coffee and of Robusta coffee, which was found to be better suited to the warmer plantation areas of Uganda.

It is only to be expected that Arabica coffee and Robusta should grow better under shade, for both species are forest plants. For Robusta coffee there is striking evidence on this point in the north of Uganda and in the adjacent regions of the Sudan, where the species flourishes in many of the forests in a truly wild state, although the climate is so hot and dry that it is impossible to cultivate the crop successfully in the open.

Nutman has shown that Arabica coffee can assimilate rapidly only when the leaves are not exposed to full sunlight, and his work explains why there is often so great a contrast between the appearance of unshaded bushes, with their stunted growth and yellow leaves and that of bushes under shade, whose growth is more vigorous and whose leaves are a healthy dark green colour.

While it has not been proved that shade is necessary to fully grown coffee trees in Uganda, another effect which has relevance to Uganda conditions is the repression of fruiting on young bushes. This is a most important effect, for dieback consequent on overbearing is a great problem, especially in the cultivation of coffee by African peasants, who can hardly be persuaded to strip the first crops on their coffee in order to benefit the future health of the bushes. Possibly the great age (more than fifty or a hundred years) of some of the old trees which were established in banana gardens may be due in part to the good start they had from the shady conditions which prevented heavy fruiting during the first three or four years of growth.

At high elevations, the provision of shade trees greatly reduces the diurnal variations in temperature and, in particular, it ensures high temperatures at night, thereby enabling the coffee to make growth less stunted and compact than when the bushes are exposed to very cold air. The effects of low night temperatures are very marked in the Kigezi District of Uganda, where, in the bottoms of valleys at an altitude of 6,000 ft., minimum temperatures sometimes are little above freezing point, and where in consequence the coffee bushes make very slow growth indeed—much less than that of coffee at 6,500 ft. or higher on Mt. Elgon. It is probable that the provision of shade over coffee in the Kigezi valleys would enable the bushes to make much better growth. On Mt. Elgon, although the coffee usually is not unduly stunted, yet there is much evidence that shade greatly helps the bushes, especially by reducing the incidence of dieback.

In addition to the direct influence of shade on the coffee, there are many ways in which the trees act upon the soil and thereby affect the growth of the coffee. For example, shade has great value in preventing the soil temperature from rising too high—in unshaded coffee the exposed soil often becomes too hot for optimum root growth of coffee. Shade greatly reduces the cost of cultivation, for it depresses the growth of weeds and especially of grasses such as 'couch' (*Digitaria scalarum*), whose control is one of the main problems of planting in Uganda.

The roots of shade trees, as well as the branches, must be considered, for they have an important influence on the soil. The tree roots may be in competition with the coffee roots for supplies of water and soil nutrients, and many species cannot be used as shade trees because the growth of coffee is stunted in their vicinity. On the other hand, it is possible that the drying action of trees may be valuable. One of the problems of Arabica coffee growing in Uganda is that when there is not a strongly marked dry season the bushes may not have received a check sufficient to produce a good flowering at the onset of the rains; and instances have been seen when coffee near large trees—where, doubtless, the soil has been relatively dry—has flowered much better than coffee at a distance from the trees. Strong deep root systems of shade trees have important effects on soil composition, tapping deep-seated reserves of mineral nutrients which are brought up and deposited on the surface of the soil in the fallen leaves of the shade tree; and, if shade trees are grown in succession, the roots of the trees when dead rot to leave channels by which coffee roots can penetrate deeply into the earth. In compact soils a high proportion of the deeper roots of coffee appear to follow the traces of old tree roots.

Of course, the effects of shade trees may not be entirely advantageous. As mentioned above, some species compete unduly with coffee and restrict its growth. If the shade is too heavy, the cropping of the coffee may be excessively depressed; and very heavy shade may encourage insect pests; for example, the berry borer, *Stephanoderes hampei*, which flourishes in forest conditions. It appears, however, that both for Arabica coffee and Robusta coffee in Uganda it is better to have controlled shade rather than no shade at all. The shade should be evenly distributed and should be high above the tops of the bushes, so that there may be no intermingling of the coffee with the branches of the shade trees.

It is relatively easy to plant shade trees if they are put out at the same time as the coffee, for the trees will grow faster than the coffee and can soon form a canopy; but it may be very difficult to establish shade trees among fully grown coffee. This is a problem which must be faced, for there is much unshaded coffee which would benefit by the provision of shade. The process may be costly; large holes must be dug to prevent undue competition from the coffee roots until the shade trees are established; it may be necessary to add compost or fresh soil, while manure, if available, should be given to the trees until they are making rapid growth. Further, in countries with a longer experience of planting than in East Africa it has been recognised that shade trees must be grown in succession. On the coffee estates of Java and the tea estates of Ceylon the regeneration of shade trees is an important part of estate routine, and it has often been found advisable to grow a mixture of shade trees, as reported by Gillett to be the case in regard to coffee cultivation in Southern India.

To fell large trees in plots of tea and coffee may cause damage to the crops beneath, but this trouble may be largely avoided by ringing the trees so that they die as they stand, dropping their twigs and branches in succession until only the trunk remains. This practice has the additional advantage that the risk of root disease (*Armillaria mellea*) is greatly reduced, for Leach has shown that if the starch reserves are exhausted before the tree dies, the fungus will not attack the roots. This method of killing trees greatly simplifies the work of removal, a most important fact in the establishment of shade trees, for it is obviously advisable to plant them closely at first, thinning them to suitable spacing as they become fully grown.

The systematic regeneration of shade trees in Uganda has not yet been practised on a large scale, but a considerable amount of experience is available concerning the relative value of many species, both indigenous and exotic, that may be used for shade.

The ideal shade tree should have diffuse foliage and a spreading habit, and preference would be given to leguminous trees, which should be able to fix nitrogen. Yet many trees indigenous to Uganda and fulfilling these conditions are of no value on account of their root systems. For example, *Piptadenia africana*, a tall tree with a spreading crown of fine foliage which is common in the lakeside forests, has so many large roots near the surface that neither coffee nor any other crop will grow near it. *Albizzia zygia*, a smaller spreading tree frequent in secondary forest in the lakeside zone, also cannot be used on account of root competition; while some other Albizzia species, notably *A. coriaria*, found in the drier areas, are of no value for the same reason. There is a division of opinion on the merit of the flat-topped Acacias, of which *A. sieberiana* is one of the most common. In the wetter districts these trees are considered to be beneficial to coffee, but in the dry areas they take too much water out of the soil and, in any case, they seldom live for many years in a plot of coffee. *Entada abyssinica* and *E. sudanica* (the former is very common) are regarded as beneficial to coffee; they are worth retaining as shade trees but scarcely merit planting for that purpose; their growth is relatively slow, their habit is very low, and they are often leafless in the dry seasons.

The indigenous *Erythrina excelsa*, a large tree which is abundant in riverine forests near Kampala, makes quite a good shade tree, but also suffers from the drawback that it is leafless in the dry season. *Erythrina abyssinica*, widespread in its various forms throughout the savanna forests of Uganda, is also leafless in the dry season and it usually forms too low a crown to be an ideal shade tree; but even when devoid of leaves it serves as a windbreak and it possesses certain great advantages: it flourishes under conditions too dry for most other shade trees; it is easily established from large woody cuttings; and it is well adapted to pollarding—a very important point in areas such as Bugishu, the West Nile District and Kigezi, where there is a distinct shortage of fuel. In such districts it is a most suitable tree to plant in and around the plots of coffee grown by peasants.

Although many of the leguminous trees of the forests cannot be recommended for shade trees, yet some of the non-leguminous species are well suited to that purpose. Their growth is too slow for it to be worth while to plant them as shade trees, but if specimens are encountered when land is being cleared for planting coffee they should be retained. For example, coffee flourishes beneath the shade of the *Mwafu* (*Canarium Schweinfurthii*, Burseraceæ), a very large spreading tree typical of secondary forest near Kampala.

The *Kirundu* (*Antiarias toxicaria*, Moraceæ), which also is abundant there, provides good shade in those instances where it branches low, though often the crown is borne on a long slender bole. Even the *Mvule* (*Chlorophora excelsa*, Moraceæ) is a useful shade tree, for in spite of the very dense crown of foliage coffee grows well beneath this species. On some of the estates in Busoga, after the coffee in the open was dead, the bushes close to the *Mvule* trees survived in fairly good health.

Many of the more quick growing trees, typical of secondary forest, have been planted as shade trees and have proved to be of value. *Mæsopsis eminii* (Rhamnaceæ) forms shapely trees when young, but soon becomes irregular in habit. *Cordia holstii* and *C. millenii* (Boraginaceæ), soft-wooded spreading trees, soon provide good shade. *Croton macrostachys* (Euphorbiaceæ) is very rapid in growth and is being planted for shade in Bugishu. *Musanga smithii* (Moraceæ), whose habit—an erect bole, surmounted by a canopy of radiating branches—has earned it the name of 'umbrella tree', is one of the most valuable quick growing shade trees in the warmer, wetter areas. It requires no training or pruning, and in spite of its soft wood it appears to last for about twenty years, forming large trees with a total height of about 50 ft. and a spread of 70 ft. In West Africa the species is a pest on account of its tendency to sucker very profusely, but this drawback has not been observed in Uganda.

Milletia dura is one of the most quick-growing native leguminous trees and is sometimes planted. Its spreading habit and light foliage are great advantages, but the wood is brittle and branches are often broken off by storms. *Sesbania ægyptiaca*, a tall shrub or small tree with finely divided leaves and a trunk of very soft wood, makes even more rapid growth and in some circumstances is valuable for temporary shade. In cool districts such as Toro it lives for about seven years, yet in the warmer parts of the country it dies after four years. Although it has given good results as a shade for Arabica coffee in Toro, yet it has had a bad effect on tea and Robusta coffee in Buganda. The mass of fine roots produced by the Sesbania near the surface may compete unduly with the root systems of the other crops for water supplies in dry weather.

In spite of all the advantages of the native trees mentioned above, yet on the whole there is none so useful as some of the native figs, especially those types, mostly belonging to the species *Ficus thonningii*, that are known collectively as *Matuba*, and whose bark is commonly used to manufacture bark-cloth. There is a large range of named varieties, varying in habit, in leaf shape and in the quality of the bark-cloth they finish. A considerable collection (about forty types) is being grown in the Botanic Gardens, Entebbe, in order that they may be studied as shade trees. Other species of *Ficus* with larger leaves are useful as shade and as sources of bark-cloth (though of inferior quality), such as *Ficus dawei* (*Kokowe*).

There are many advantages to the use of all these figs for shade in peasants' plots of coffee—they are easily grown from large woody cuttings and therefore may be established even in fully grown coffee; they furnish a source of income to the peasant, for although the bark-cloth is much less worn than formerly yet there is still a considerable trade in it for use as curtains, etc.; and, finally, coffee flourishes near the trees in spite of their relatively dense shade. The ease with which the figs are grown from cuttings renders them of use as shade trees on European estates. They may be established in succession among old coffee and, in fact, it is better that they should be grown in rotation, for they are not long lived; under dry conditions they last little more than twenty years. As was mentioned above, the varieties of figs vary greatly in size and habit of growth, and the foliage is so dense that they should not be planted so closely as to make a continuous canopy. In most cases a spacing of 50 or 60 ft. will be suitable. If plenty of poles are available for planting they may be put in more closely and thinned when the trees are grown.

Of exotic shade trees mention should be made firstly of Para rubber (*Hevea brasiliensis*), which is quite a useful shade tree for Robusta coffee in Uganda at altitudes of about 4,000 ft. In really tropical countries the shade of Hevea is much too dense for coffee to crop well beneath it, but under the relatively cool and dry conditions of Uganda the foliage is so sparse that it is quite a suitable shade. There is the additional advantage that, if rubber prices advance, it provides an additional source of income by tapping for latex.

Several species of Erythrina, which are so important as shade trees in other countries, have to be tried in Uganda, but none have yet proved to be of great value. The Dadaps, *Erythrina indica* and *E. Lithosperma*, are of no use at all; they are so badly attacked by stem-boring caterpillars that the branches die back repeatedly and the plants remain stunted bushes. The same caterpillars attack *Erythrina micropteryx*, but usually that species will, in time, grow into a large spreading tree. *Erythrina umbrosa* and *E. velutina* are growing fairly rapidly at Entebbe, although some twigs die back. One exotic species, *E. glauca*, is little attacked by stem borers and grows rapidly, but its habit is too low for it to be well suited to act as shade for coffee.

Samanea saman, the Rain Tree, does not grow so rapidly in Uganda as in hotter, moister countries, but it will in time form a large spreading tree at altitudes below 4,500 ft. Above that elevation its growth is too slow to be of value. Coffee grows well under the shade of the Rain Tree, although careful pruning will be needed to prevent its foliage from becoming too dense.

Gliricidia sepium (*G. maculata*) has been used by the Department of Agriculture to provide shade for Robusta coffee. This species, like the figs, has the advantage that it is easily established by planting large poles. But it is far from ideal as a shade tree for coffee. It is a small tree and only with difficulty can it be induced to form a trunk long enough to bring the branches and leaves above the coffee; the crown is so compact that much pruning is required to thin the foliage, and it is very subject to mealy bug (*Pseudococcus kenyæ*), which spreads on to the coffee.

Leucæna glauca does not grow large enough in Uganda to be of much use as a shade tree, but when it is repeatedly cut back it is of great value as a soil cover. The growth of *Dalbergia sissoo* and *Dalbergia latifolia* is so low that they show little promise. Other exotics that have been tried include *Cassia grandis*, *C. spectabilis*, *Dalbergia microphylla*, *Lonchocarpus* sp., *Adenanthera pavonina*, *Peltophorum pterocarpum* (syn. *P. ferrugineum*), and *P. speciosum* var. *africanum;* but none seem of outstanding value.

Several species of *Albizzia* also have been tested. *A. lebbek* makes very slow, compact growth, with a crown of foliage too low for coffee shade; *A. fastigiata* has a more suitable habit, but also is very slow growing. *Albizzia falcata* (syn. *A. moluccana*), on the other hand, is very rapid in growth and would be of considerable value as a shade tree if only it were a little more permanent; it almost always succumbs to root disease before it is ten years old, and is often broken or blown down by wind. Finally, there is *Albizzia chinensis* (syn. *A. stipulata*, *A. marginata*) which has proved to be the most suitable shade tree for Robusta coffee; it is easily established, rapid in growth (although for two or three years it grows at an acute angle before the stem is pulled up to the perpendicular); it forms a diffuse crown of foliage well above the coffee and requires little pruning; and it seems to be relatively long-lived; in hotter countries it is reported to have a short life, but the original specimen in the Botanic Gardens at Entebbe (about twenty-five years old) is still in good health. In order to obtain shade quickly, seedlings of this *Albizzia* may be planted relatively closely, e.g. at a spacing of thirty feet; as the trees grow, a few of the lower branches may be removed in order that a high canopy may be formed and, as fully grown trees have a wide spread, it may be thinned to a spacing of sixty feet. Experiments are being laid down to test the relative worth of the native figs and of *A. chinensis* as shade for Robusta coffee, for experience appears to demonstrate that these two types are the best shade trees for the warmer, wetter parts of the country.

Tea has not been grown long enough on a large scale in Uganda for many definite statements to be made concerning the best methods of culture, yet there is much evidence that shade, if it is at all heavy, has a bad influence on tea, as the young shoots develop with long internodes and the manufactured tea has a very watery liquor. But it does appear that there is a need for trees which will break the force of the dry winds which blow at some times of the year and which soon stop the flushing of exposed bushes. For the purpose of windbreaks in tea it appears unlikely that there will be found a more suitable tree than *Grevillea robusta*, used for the same purpose in many tea-growing countries. Its erect habit, which prevents it from becoming a good shade tree, is just what is required in the circumstances; *Grevillea* is quick growing, easy to establish and does not compete unduly with tea bushes for water supplies. Australian chemists have reported Silky Oaks as containing considerable quantities of aluminium in their leaves and twigs. There was said to be some doubt as to the identification of the species, as some Silky Oaks contained aluminium whilst others did not; but in the light of later knowledge of the influence of soil characters on the uptake of ash-constituents by plants it is probable that the Grevillea, which was one of the species concerned, absorbed aluminium from acid soils but not from neutral or alkaline ones. This effect explain why coffee in Uganda has not greatly flourished in proximity to *Grevillea*.

There is need for investigation of this question of the composition of the leaf litter afforded by various species of shade trees on our principal East African coffee soil types. In coffee, a shade-tree whose leaf-mulch is rich in bases would be desirable; whereas in tea the planting of a tree that made for increased surface-soil acidity might be an advantage, e.g. in correcting the accumulation of bases on old house sites, on which tea will not grow.

It is hoped that investigations of this problem may be made, but for the present there is no doubt that widely spaced *Grevillea robusta* trees will have a beneficial effect on tea that may be exposed to wind, and that this tree may be recommended for planting on Uganda tea estates.

It was mentioned above that, with regard to tea in Uganda, shelter from the wind rather than shade from the sun is needed. The same consideration applies to many perennial crops, for dry winds have a very bad effect on growth. For example, it appears that exposure is often the cause of poor growth and cropping in citrus fruits; it is certain that young trees greatly benefit from shelter. In addition to the species utilised to provide shade, other trees have been planted as wind-breaks. The indigenous *Nsambya* (*Markhamia platycalyx*, Bignoniaceæ) is quite useful for the purpose, for although its growth is not so rapid nor its height as great as that of some exotic trees, yet it possesses an erect habit, does not compete unduly with crops in the vicinity, and produces poles valuable for building purposes.

The question of root competition is of great importance in the case of many of the quick-growing exotic trees which have been planted for windbreaks, for their roots will extend over a wide zone, checking the growth of any crops that may be planted there. The various species of *Eucalyptus* and *Cedrela* are especially harmful in this respect, but the same effect may be seen in a smaller degree when *Casuarina equisetifolia*, *C. cunninghamiana* or *Cassia siamea* are planted. As already mentioned, the provision of windbreaks is of more importance on tea estates than on coffee estates, where shade trees may be planted through the crop. There is relatively little pressure on land in Uganda, and therefore it can almost always be arranged that definite belts of trees can be planted. It is often found that there have been relatively dense native settlements along the tops of ridges and that tea will not grow on the old house sites. It is advisable that such areas on tea estates should be planted with trees to serve not only as windbreaks but also as sources of fuel, of which a good supply is required for tea factories.

If the trees are to be used for fuel, there is much to be said in favour of planting Eucalyptus, which grows rapidly and burns well; but it must be remembered that the effect of root competition will be seen over a wide zone. Where space is limited and tea will be planted near the windbreak, it is better to use other trees, such as *Acrocarpus fraxinifolius*, whose rapid erect growth would justify more frequent planting in Uganda, and whose root competition does not seem so strong. At altitudes of about 6,000 ft., where the growth of this species is slower and its habit is more spreading, it should be a useful shade tree for coffee.

—*East African Agricultural Journal.*

EMERGENCY RUBBER COAGULANTS

The following notes are issued in view of the prevailing shortage of formic and acetic acids among small users. It is recommended that proprietary coagulants of unknown composition should be avoided and that the prices at which coagulants are offered should be carefully scrutinised in relation to their coagulating power. For comparison it may be mentioned that the cost of coagulation with formic and acetic acids at the present controlled prices amounts to approximately 0.4 cents per pound of rubber.

ECONOMICAL USE OF COAGULANTS

Under normal conditions it is recommended that the dose of acid used for coagulation should be such that a clear or only slightly cloudy serum remains. This dosage should not be exceeded and it may be justifiable under present circumstances to eke out supplies by reducing the quantity slightly. It should, however, be noted that the presence of a milky serum indicates that rubber is being lost.

Many small producers roll their rubber within a few hours of addition of acid to the latex. The amount can be reduced by approximately ⅓ if the latex is allowed to coagulate overnight.

It has been suggested from Malaya that economy can be effected by re-using a proportion of the serum. Tests of this method are being carried out at Dartonfield but the results so far have been rather conflicting. In an initial trial moderately good coagulation was obtained when latex (previously diluted to a dry rubber content of 2¼ pounds per gallon) was treated with its bulk of serum from the previous day's coagulation and the dose of acid was reduced to ⅔ of the normal quantity. In a later trial under similar conditions coagulation was incomplete even when ¾ of the normal dose of acid was used but a further trial now in progress is giving satisfactory results with ⅔ of the normal dose. It seems possible that the value of the method is affected by weather conditions. It can, however, be recommended for trial on estates.

ALTERNATIVE COAGULANTS

Sulphuric Acid.

Rubber manufacturers object to the use of sulphuric acid as a coagulant because the presence of an excess of acid in the rubber, which may easily occur under estate conditions, has an adverse effect on its vulcanizing properties. Nevertheless sulphuric acid can be regarded as a reasonably satisfactory emergency coagulant and it is, in fact, the only alternative material which is likely to be obtainable in adequate quantities for estate use at short notice.

Concentrated sulphuric acid (oil of vitriol) is extremely dangerous to handle and should be diluted to half-strength before issue to estates and retailers. The half-strength acid should be diluted before use as a coagulant in the proportion of 1 part of acid to 80 parts of water. *Dilution should be effected by adding the acid slowly to the water and not by adding water to the acid.* Approximately ½ pint of diluted acid is required to coagulate a rubber sheet weighing 1½ pounds. (8 fluid oz. of half-strength acid in 4 gallons of water per 100 pounds of dry rubber.)

The following points should be carefully noted when using sulphuric acid:—

1. The quantity used for coagulation should be as small as possible. A slightly cloudy serum should remain after coagulation.
2. The rubber must be thoroughly washed during and after milling to remove sulphuric acid. The latex should be diluted to a rubber content not exceeding 1½ lb. per gallon.
3. Machinery is liable to be damaged by the diluted acid unless thoroughly washed after use.

Half-strength sulphuric acid is at present being supplied by a leading importer at Rs. 2 per gallon (exclusive of the cost of carboys). One gallon should suffice for the coagulation of approximately 2,000 pounds of dry rubber.

Vinegar.

Vinegar is a useful emergency coagulant, but it is not likely to be available in large quantities. Toddy vinegar contains approximately 5 per cent. of acetic acid and 1 gallon will coagulate approximately 100 lb. of dry rubber. It may be used undiluted for crepe manufacture but should be diluted with an equal quantity of water for sheet making. Approximately ½ pint of diluted vinegar is required to coagulate a rubber sheet weighing 1½ lb. Rice vinegar containing about 8 per cent. of acid is also available.

Coconut Water.

The milky fluid which occurs in the coconut ferments on standing and produces an acid liquor which can be used as an emergency coagulant. The maximum acidity, corresponding to about ½ per cent. acetic acid, develops in 3-4 days, after which a reduction of acidity takes place. This material and other plant extracts referred to in a later paragraph should be strained through clean cloth before use to remove any solid matter. Approximately one 'bottle' (⅛ gallon) of the fluid is required to coagulate a rubber sheet weighing 1½ lb.

Pyroligneous Acid.

Pyroligneous acid containing approximately 10 per cent. of acetic acid together with other products is obtained by the distillation of wood or similar material such as coconut shells. The practicability of preparing an improved material from coconut shells at an economic price is being investigated by the Coconut Research Scheme in conjunction with the Department of Industries but commercial supplies are not available at present.

Sugar.

When undiluted latex containing a small quantity of sugar is allowed to stand overnight the sugar ferments and moderately complete coagulation occurs. This form of coagulation does not produce first grade rubber; crepe of off-colour owing to the absence of sodium bisulphate and sheet is 'bubbly'. However, the method may be useful, especially to smallholders, in case of a severe shortage of coagulants.

For the preparation of a rubber sheet weighing 1¼ lb., ¼ ounce of sugar (half match-box full) dissolved in ¼ pint of water should be added to ⅛ gallon of undiluted latex. (1 lb. of sugar in 2 gallons of water per 100 lb. of dry rubber.)

Other Coagulants.

Lime juice contains 5-10 per cent. of citric acid and may prove useful as a coagulant for smallholders. The juice of 3-6 limes, depending on ripeness and juiciness, is required for the coagulation of a rubber sheet weighing 1¼ lb.

Various other plant juices and extracts are stated to be used by smallholders when normal coagulants are unobtainable or unduly expensive. *Goraka* fruits when extracted twice by boiling with water were found to have an acid content of approximately 10 per cent. The extract from 1 lb. of semi-dried *goraka* fruits would thus suffice for the coagulation of 20 lb. of rubber. *Weera* and *kamaranga* fruits also yield acid extracts.

No great objection can be raised to the use of such products in an emergency but vinegar or coconut water are considered preferable.

Under the present exceptional conditions it may be necessary as a temporary measure for some producers to vary their normal methods of coagulation. *It is, however, very strongly urged that normal procedure should be resumed at the earliest possible moment with a view to maintaining the Island's reputation for producing good quality plantation rubber.*

—*The Tropical Agriculturist.*

AN APPEAL

FOR GIFTS OF COFFEE FOR THE CANADIAN TROOPS IN FRANCE

Soon after the outbreak of hostilities in Europe, it was proposed that a few tons of Indian coffee should be presented to the British and Allied Forces as a token of the deep appreciation of planters of the immense sacrifices the Forces were making in the cause of humanity, and the safety of the Empire. It was also suggested at the same time that the Indian Coffee Cess Committee should take the lead and make such arrangements as were necessary to give effect to this proposal.

As a result of the efforts since made by the Committee, the Director of the Canadian Legion War Services, now in London, has, with pleasure, accepted the offer of a gift of Indian Coffee for the use of Canadian Troops when in France.

It is singularly fortunate that an opportunity has been afforded to India to demonstrate to Canadians how palatable Indian coffee is. Though Canada is a growing market for coffee and Canada does appreciate good coffee, Indian coffee is still almost unknown to Canadians.

The Indian Coffee Cess Committee would be glad to collect the gifts of coffee planters may like to make for the purpose. Arrangements will also be made by the Committee to despatch this coffee to London and to get it roasted, ground and packed before it is handed over to the Director of the Canadian Legion War Services.

Advices of gifts may please be sent to the Secretary, Indian Coffee Cess Committee, Bangalore, who will duly acknowledge them in these columns.

WHAT IS MOCHA COFFEE?

This is a question which interests us because Kenya produces quite a large quantity of Mocha type coffee, which we believe can match in the cup the best Mocha's of Arabia. In our belief, Mocha coffee is essentially a matter of the right variety of coffee, the right climate and the right preparation. We have in Kenya the right variety of coffee and the right climate and we can give Mocha preparation to as much of our coffee as the world demands.

We have recently studied coffee literature with a view to finding out just what Mocha coffee is. From Mr. William K. Ukers in 'All About Coffee' we derive the following information:—

'Once all the coffee of Arabia went to the outside world through the port of Mocha, which never raised any coffee. The port is no longer of commercial importance; but its name has been permanently attached to the coffee of this country.

Mocha, *Moka* or *Morkha* coffee, i.e., *Coffea arabica*, is raised principally in the vilayet of Yemen, a south-eastern district. Yemen is a rugged, mountainous region, in which innumerable small valleys at high elevations are irrigated by waters from the melting snows of the mountains.

In Aden and Hodeida the bean is submitted to further cleaning by the principal foreign export houses to whom it has come from the mountains in rather dirty condition.

For many generations Mocha coffee was recognised throughout the world as the best coffee obtainable; and until the Pure Food Law went into effect in the United States, other high grade coffees were frequently sold by American firms under the name of Mocha. Now, only coffees grown in Arabia are entitled to that valuable trade name. They grow in a small area in the mountainous regions of the south-western portion of the Arabian peninsula, principally in the province of Yemen, and are known locally by the names of the districts in which they are produced. Commercially they are graded as: Mocha Extra, for all extra qualities; Mocha No. 1, consisting of only perfect berries; No. 2, showing a few broken beans and quakers; No. 3, having a heavier percentage of brokens and quakers and also some dust. Arabia being a geographical rather than a political division, shipments of her coffees (according to U.S.A. Customs Regulations, 1931, amended 1934, effective July 8, 1934) require shipments to be marked with the particular place of origin: Aden, Bahrein Islands, Hadramaut, Kumait, Oman, Qatar, Saudi, Arabia. Trucial Coast, or Yemen.

The coffee of Harar is known to the trade as Mocha longberry or Abyssinian longberry. Some of it is exported directly from Jibuti and the rest is forwarded to Aden in Arabia, for re-exporting.

The name Mocha may be used only for coffees of Arabia. Before the Pure Food Law was enacted, it was frequently the custom to mix Bourbon Santos with Mocha and to sell the blend as Mocha. Also, Abyssinian coffees were generally known in the trade as Longberry, Mocha, or just straight Mocha.

The event of the year (1907) which created the most stir and discussion, was the coming into force of the Pure Food and Drugs Act, making it obligatory to label coffee, and all other foods, truthfully. One of the earliest rulings under the Act forbade the then prevalent mislabelling of various coffees as "Mocha" and "Java", which were about the only names familiar to consumers before the ruling.

One of the most celebrated coffee cases under the Pure Food Act was tried in Chicago, February, 1912. The question was, whether in view of longstanding trade custom, it was still proper to call an Abyssinian coffee (Longberry Mocha) Mocha. The defendant was charged with misbranding, because he sold as Java and Mocha a coffee containing Abyssinian coffee. The court decided that the product should be called Abyssinian Mocha; but since then, general acceptance has obtained of the Government's view point as expressed in F.I.D. No. 91, which was that only coffee grown in the province of Yemen in Arabia could properly be known as Mocha coffee.'

From a translation of Mr. H. E. Jacob's book *The Saga of Coffee*, we find one paragraph only, which reads as follows:—

'The name "Mocha" has a wonder-working influence. Araby cannot produce nearly as much Mocha as the public demands. Brazil has here come to the coffee-merchant's aid. During the rainy season, coffee is shipped on old-style "wind-jammers" to Arabia, by the longest route, round the Cape of Good Hope. It reaches port as wet as a soaked sponge. The damp and the long voyage have spoiled its aroma. Doctored and dried under the Arabian sun, and rechristened with the money-making name of Mocha, it is now shipped on steamers to be sold in the great markets of the West.'

Whilst Kenya Mocha type may not have all the characteristics of the genuine Mocha of Yemen, in the cup it is probably the nearest match which the world produces. Supplies are somewhat limited, but if traders overseas are interested we suggest that they should allow the coffee trade in Nairobi to match the types they require.

—*Monthly Bulletin* of the Coffee Board of Kenya.

FINE 'NAPIER' GRASS OF MYSORE

This is a dry land fodder grass, and cultivators have greatly appreciated it. Even on poor lands, this wonderful grass grows excellently well and self-seeds. The only place in India where this grass was grown till this year was Hebbal. It was obtained by the Hebbal Farm nearly 12 years ago from California. It is issued from Hebbal to several parts of the State and to Bombay Presidency, Nawanagar, North-West Frontier Province, etc.

The bringing out of this grass which was sleeping in the botanical plots for 12 years at Hebbal was an achievement of the Mysore Agricultural Department. There is no grass to equal it to grow on dry lands as a purely rain-fed crop. It thrives on the poorest soils. The Agricultural Department has made arrangements to grow this grass over 1,400 acres all over the State this year. Mr. Kerr, the Animal Husbandry Expert of the Government of India, pointed out during his visit to Mysore that 'the extension of this grass on similar poor land is obviously called for as seed is available and will prove of immense value as fodder for both sheep and cattle'. —*Mysore Information Bureau.*

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 3rd February 1940 were:—

Rubber, including export licenses	... 54 cents a lb.
Rubber Export Quota ...	... 14.25 cents a lb.
First quality Rubber alone	... 40.00 cents a lb.

TEA QUOTA PRICES

The quota prices ruling in South India on 14th February 1940 were:—

Tea Export Quota	... 6 annas 6 pies (Nominal)
Internal Market Rights	... 1 pie per lb. (Nominal)

In Calcutta the market for Export ranged from As. 7-3 to As. 7-7 in the early part of the week, but the price declined to As. 7 per lb., probably due to the fact that Export sales are now practically over.

Internal consumption quota 1¼ pies per lb.

TEAS ADMITTED INTO THE U. S. A.—COMPARATIVE FOR FOUR MONTHS TO OCTOBER 31st 1939

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Black Teas—										
Regulating Teas ...										
India ...	5,837,383	5,416,868	6,306,791	5,224,571	3,790,008	3,190,592	3,372,724	2,504,154	3,050,459	2,934,800
Ceylon ...	10,565,336	9,322,975	8,110,772	6,998,094	6,661,595	7,695,363	7,397,514	7,017,550	7,011,203	7,748,397
Java ...	2,548,346	3,489,398	4,485,165	6,410,235	4,821,906	5,643,611	4,718,038	4,658,935	3,883,433	5,838,274
Sumatra ...	88,510	126,761	472,043	2,486,029	1,080,501	1,999,165	2,245,808	2,263,971	2,766,984	3,285,838
Africa ...	...	4,622	7,280	6,907	...	35,514	18,902	8,172	6,798	65,455
Blended ...	220,660	209,063	281,179	510,792	500,692	154,410	236,433	217,441	119,567	191,708
Total ...	19,260,235	18,569,687	19,663,230	21,666,628	16,854,702	18,718,655	17,989,419	16,670,223	16,838,444	20,064,472
Other Blk. Blends ...	...	...	935	3,030	1,100	56,232	15,320	58,981	124,566	1.082
Formosa ...	8,351	112,545	...	18,654	1,107,851	17,285	497.037	1,220,822	176,530	305,172
Japan ...	...	...	665	...	159,259	243 314	340,459	254,464	78,618	105,335
Congou ...	500,307	1,097,548	795,966	1,956,665	2,331,759	818,437	694,012	321,323	622.812	804,240
Total ...	508,658	1,210,093	797,566	1,978,349	3,599,969	1,135,268	1,546,528	1,855,590	1,002,526	1,215,829
Total All Blks. ...	19,768,893	19,779,780	20,460,796	23,644,977	20,454,671	19,853,923	19,536,247	18,525,813	17,840,970	21,280,301
Green Teas— ...										
Japan ...	8,246,360	7,317,561	6,683,248	7,166,642	6,356,470	4,323,139	4,824,770	5.682.265	3,911,374	5,806,907
,, Dust ...	855,310	935,370	1,336,590	1,594,958	861,682	944,590	752,720	830,963	906,695	1,212,150
,, Gunpowder ...	...	...	...	126,393	87,210	103,647	46,465	28,915	23,024	124.513
India ...	...	...	...	...	...	...	...	...	...	...
Ceylon ...	100,400	350	...	36,835	60,800	...	50,000	...	...	...
Ping Suey ...	1,748,025	1,982,377	1,077,896	1,926,711	1,090,857	1,141,016	1,937,370	1,106,145	1,246,316	155,232
Country Green ...	73,447	133,726	79,317	327,513	59,963	96,454	117,868	35,703	31,358	27,090
	11,023,542	10,369,384	9,177,051	11,179,052	8,516,982	6,608,846	7,729,193	7,683,991	6,118,767	7,325,892
Oolong—										
Formosa ...	1,815,007	2,499,847	2,867,260	4,055,572	2,561,798	2,699,496	1,137,858	753,540	1,242,515	519,181
All others ...	307,973	210,967	195,673	201,535	225,682	221,776	298,823	313,409	218,367	307,810
GRAND TOTALS ...	32,915,415	32,859,978	32,700,780	39,081,136	31,759,133	29,384,041	28,702,121	27,276,753	25,420,619	29,433,184

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sales Nos. 31 and 32 were held on 29th and 30th January and 5th and 6th February, 1940.

As in previous sales, a few selected lots of good liquoring teas sold at good prices, and there was a good demand for well made Pekoes. For the rest, enquiry was very limited and the bids registered showed an irregular decline of ½ to 1 anna. Sellers were not prepared to sell at these prices, but considerable quantities were sold after the sale at about six pies below last rates.

DESCRIPTION	Season 1939-40			Average on same date	
	Sale No. 31	Sale No. 32	Average to date	In 1938	In 1937
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	11 7	11 0	11 5	9 11	10 5
For Internal Consumption:—					
Leaf Teas ...	3 10	3 6	4 6	3 6	4 0
Dusts ...	4 5	4 4	4 5	4 2	5 2
Green Teas ...	7 10	7 5	5 10	4 10	...

RUBBER.—London Rubber on 12th February 1940, 12 15/16*d.*

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on Jan. 23 & 30, 1940
Achoor	93
Anei Erngal	85
Arrapetta	75
Cheruvally	1.00
Chundale	90
Kairbetta	87
Kilmelfort Group	80
Koney	70
Kumbazha	78
Lockhart	94
Manalaroo	82
Nonsuch	1.13
Orkaden	75
Pattumalay	85
Pootoomulla	90

South Indian Tea—(*contd.*)

	Sales on Jan. 23 & 30, 1940
Singara	1.05
Surianalle	93
Touramulla	78
Vaghamon	71
Vellamalai	90
Wentworth	81

Rubber

	Sales on Jan. 25 & Feb. 1, 1940
Ribbed Smoked Sheet ...	55¼ to 55⅜
Contract Crepe	55¼
Mottled Brown Latex Crepe	51 to 53
Brown Scrap Crepe ...	50¾

The Madras Market

Current on 16th February, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

Since our last report a fortnight ago, markets have remained exceptionally dull and conditions are probably as quiet as in the worst days of the 1938 slump. Apart from a firm market in Government securities and considerable investment support for the better class preference shares, conditions have been apathetic, and the volume of business transacted has been very nominal. It is easy to account for the falls that have taken place in a large number of industrial equities but it is impossible to find an adequate reason to account for the sharp setback in rubber shares when the price of the raw commodity has improved and when it is known that rubber companies will be little effected by the excess profits tax as it is in its present form. When markets suffer a sharp setback it is usual for buying orders to be withdrawn or held back until markets are again more certain, and this is the only reason that can account for the lack of interest shown in shares of the rubber section which under current conditions must be doing very well.

Rubber.—The price of Spot rubber at one time touched 1/0⅜*d.*, in London. The price locally on the West coast is we understand in the neighbourhood of 40 cents per lb. for uncouponed rubber and 14 cents for couponed rubber. Support in this section has been so limited that it has been impossible even to absorb the usual routine orders without a drop in price. Cochin Malabars after touching Rs. 6 closed firmer at Rs. 6¼ buyers, sellers holding out for Rs. 6½. Malankaras changed hands at Rs. 38½ with likely sellers over. A small buying enquiry was noticeable for Vaikundams at Rs. 7½ with sellers holding out for a rupee higher. Among those of the more recent issues, Kalpettas at one time changed hands at down to Rs. 16 closed a little above their worst at Rs. 16½. Velliamuttams were purely nominal at Rs. 16. Midlands after changing hands at Rs. 4-9 as., rallied to Rs. 4-11 as.

Teas.—This section was very steady but only a limited business was reported. Periakaramalais changed hands at Rs. 17-12 as., with sellers over. On the other hand Vellamalais were transacted at Rs. 10-2 as. Small speculative interest was shown in Kalasa teas at Rs. 4-11 as. but Chembra Peaks ruled quiet at Rs. 3. United Nilgiris showed a further gain at Rs. 111-8 as. Devasholas were offered in small parcels at Rs. 7-8 as. without attracting support. Among planting debentures, Fringfords changed hands at Rs. 103 and there was a good demand for Vellamalai debentures at Rs. 104. Ouchterloney Valley debs., changed hands at Rs. 101.

FORTNIGHTLY RAINFALL STATEMENT

January 21, 1940 *to February* 3, 1940—(*Inclusive*).

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty ...	...	...	124·36	124·36	25. Kotagiri ...	...	...	56·53	56·53
3. Kallar B'dge	...	...	162·18	162·18	26. Ootacamund...	...	...	55·71	55·71
4. Koney ...	...	...	122·29	122·29	27. Yercaud ...	...	...	72·00	72·00
8. Twyford ...	...	...	242·65	242·65	30. Devarshola T.E.S. ...	...	...	77·58	77·58
9. Pettimudi ...	...	...	328·51	328·51	31. CALICUT ...	...	...	115·29	115·29
10. Kalaar ...	...	...	236·44	236·44	32. Kuttiyadi ...	...	...	191·73	191·73
11. Chittavurrai...	...	...	41·46	41·46	33. Vayitri ...	...	...	151·16	151·16
12. BODI'KANUR ...	...	...	20·17	20·17	34. Manantoddi...	...	...	83·97	83·97
13. COCHIN ...	...	...	131·21	131·21	35. Bilgiris ...	...	...	66·40	66·40
14. Mooply ...	...	...	130·62	130·62	38. Pollibetta ...	...	...	61·18	61·18
15. Pachaimallai	...	...	125·74	125·74	39. Coovercolly ...	N.R.	N.R.	74·22	N.R.
16. Mudis ...	...	...	179·59	179·59	41. Kadamane ...	...	...	265·55	265·55
17. POLLACHI ...	...	...	33·06	33·06	43. Merthisub'gey	...	...	99·02	99·02
18. Ropeway Waterfall ...	...	...	97·01	97·01	45. Balehonnur ...	...	...	88·54	88·54
21. Kerala Estate	N.R.	N.R.	148·85	N.R.	46. MANGALORE ...	...	...	116·41	116·41
22. Naduvattam	...	...	118·33	118·33	47. MADRAS ...	0·06	...	33·76	33·82
24. Coonoor ...	...	...	48·66	48·66					

N.R. = No Return Received.

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'Glenview', Coonoor, Nilgiris

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EDITORIAL

By the time this issue reaches readers they should have in their hands the appeal by the President on behalf of the U.P.A.S.I. War Fund. The aims and objects of the Fund are clearly set out, and it will be seen that the greater part of the amount collected will be disbursed at once; there will not be a recurrence of the position that occurred after the war of 1914-18 when, most fortunately in one way, the amount collected was far in excess of what was required for the benefit of planters wounded during the war, and was eventually utilised in a subscription to a Nursing Association giving free membership to all planters who had seen active service. On this occasion, a reserve is being maintained for the help primarily of planters, but the bulk of the subscriptions will go at once for the benefit of the troops.

An appeal such as this is certain to receive generous support from planters, and the only recommendation we need make in these columns is to urge most strongly the use of a Banker's Order, which will save a great deal of work and correspondence to the Secretaries of District Associations. Many planters, in addition to a regular subscription, may wish also to make occasional donations, and there are many ways of collecting the few extra rupees for this. One, which has been described as weak-willed, but is none the less effective, is to collect all four-anna pieces in a special box; another is to credit to the Fund all bridge-winnings (*without* debiting bridge-losses against it; look on the losses as payment for the evening's entertainment). A third way is to fine yourself for bad language, according to a graduated scale (though personally we intend to exempt ourselves on the golf-course—much too trying). We used this system at O.T.C. Camps at home. As we were dealing with horses, there was no restriction out of doors; on the mess table, however, was a collection box, and anyone swearing at meals contributed, according to a well thought out tariff, for the benefit of the camp servants. A simple 'damn', if we remember rightly, cost a penny: 'hell' and 'bloody' were tuppence each, and there was a higher fine for those less elegant words the Army uses. The system also illustrated incidentally that a Scotsman can on occasion 'bang saxpence'. One young man, after a particularly trying morning, had had to contribute several times during lunch; but after a bit he quietened down. He then inadvertently, and in the course as it were of normal conversation, let slip a mild and inoffensive 'damn'. The Mess President pounced at once, and in a burst of reckless rage the victim shouted 'Oh, to hell with the . . . thing; there's sixpence, and you can keep the change!' We rather think he was fined again for his remarks when he discovered that according to the tariff for the word he'd used there wasn't any change.

There's no need for us to elaborate on this theme: readers are well aware that there are many ways in which small sums, the loss of which will scarcely be noticed, can be set aside; and these in the aggregate amount to considerable and useful contributions.

There is only one other point on which comment might not be out of place. We have heard the view expressed (and we thoroughly agree) that those engaged in active service, *and* their dependents, should be properly looked after by the State, even if taxation has to be considerably increased to provide for it. But whatever provision is made, the State must always act according to fairly rigid rules, under which cases of hardship must inevitably arise. Both during and after the war therefore there will be room for work, and good work, by voluntary organisations, and it is the plain duty of all of us to give all the help we can.

SUPPLY OF GERMAN MEDICINES

The following letter has been received from the Custodian of Enemy Property, Bombay:—

1. In November 1939 a circular was sent to all Provincial Governments requesting them to send in the requirements of hospitals and institutions in their Provinces for Bayers drugs and medicines. These indents have already been dealt with. I note that no indent was received from you and therefore presume that your association does not come within the purview of the Provincial Government.

2. I have the honour to request that you will send in your requirements and this will be met if there are any surplus quantities of drugs and medicines left over after the various Governments requirements have been fulfilled.

3. I would advise you, however, that all anti-malarials have been taken over by the Government of India.

TAILPIECE

It is sometimes a mistake to be too punctual, as is illustrated by the story of the three Scotsmen who arrived at King's Cross about 7 p.m. so as to be in good time for the non-stop 8 o'clock train for the North. They decided to spend the time in the refreshment room, and enjoyed themselves so well that they did not notice until the barmaid pointed it out that their train was about to leave. There followed a frenzied rush, and two of the men managed to board the train: the third was held back by a porter. He looked solemnly after his departing friends, then turned to the porter:

'Man, that's a grave, an irrerrep . . . an irreparable error.'

'Surely not, Sir,' said the porter: 'there's another train in the morning.'

'Ah, but ye've missed the point: ye see, *they* came to see *me* off.'

THE POSSIBILITY OF REDUCING THE STRENGTH OF BORDEAUX MIXTURE FOR THE CONTROL OF COFFEE LEAF DISEASES

The marked rise in price and the difficulties connected with supplies of copper sulphate as a result of the war make necessary a very careful review of the use of this material for spraying, with a view to the greatest possible economy. It has been pointed out previously (*Planters' Chronicle*, Vol. xxxv, No. 3, February 3rd 1940, p. 53) that the indications point to the necessity of maintaining spray programmes in the coming hot weather. Whether, in areas where two sprays are normally carried out, some reduction in the post monsoon programme will be possible can only be decided at a later date, according to the development of the disease situation. Advice will be gladly given on the basis of reports on the disease situation as it appears in the monsoon months.

Economy in the issue of copper sulphate could also be obtained by reducing the quantity of mixture per acre or by reducing the strength. Evidence on the importance of the quantity of mixture applied has already been published (Ann. Rep. Coffee Scientific Officer, *Mysore Coffee Expt. Stn. Bull.*, No. 19, 1939, pp. 4-6) which suggests that attempts to cut down the volume of spray will be followed by a reduction in effective disease control. Further evidence, not yet published, still further reinforces this view and shows that the reduction in the control of disease resulted in a reduction in the subsequent crop. At the same time, the results also suggested that, with the same volume of spray per acre, control of disease was rather better with larger nozzles (No. 2) than with smaller ones, provided the pressures were maintained. Fuller details will be published later.

There remains the possibility of reducing the strength of the mixture. At the Experiment Station the normal spray application is with a 2-2-40 mixture and this has been copied on many estates. There seems no reason, for comparative trials, to assume that stronger mixtures give an improved control consistent with economics, and on estates where stronger mixtures are in use, the reduction to a 2-2-40 mixture can be recommended with confidence.

In order to investigate whether still weaker mixtures would give effective control of Leaf Disease, an experiment was laid out after the S.-W. monsoon of 1939 in a block of coffee which had received a uniform 2-2-40 spray in the hot weather of 1939. While it was realised that a post monsoon spray was not the most suitable for studying the comparative value of different sprays, the urgency of the problem made it necessary to commence work at the earliest possible moment, in the hope that some useful indications might be obtained.

The experiment consisted of a comparison of three spray strengths—1-1-40, 1½-1½-40 and 2-2-40—in a randomized block, each treatment being repeated six times on plots consisting of 8 rows of 30 plants. The sprays were applied on the 25th and 26th October and the volumes of spray applied and the pressures used were kept constant for all treatments, so that the only variable was the strength of spray utilised.

Observations were made in all the plots at the beginning of February in order to examine the disease situation in relation to the treatments. The method used was a modification of that previously used in studies of spray treatments. A preliminary examination showed that prospective cropping shoots of 7 joints formed a common growth unit on the trees in the plots and could be found with ease on most of the trees. A random sample of 100 such branches were examined in the six central rows of each plot, and records made of the number of leaves present and the number of leaves showing Leaf Disease infection. The data obtained are shown in Table I, based on the six blocks of the experiment and also on five blocks, omitting one block for reasons which will be given below.

Table I.—Leaf Count Data from Spray Strength Experiment 1939-40.

Treatment	*No. of Leaves per 100 branches*		*Percentage Infection*	
	6 blocks	*5 blocks*	*6 blocks*	*5 blocks*
2-2-40	639	646	66.7%	66.1%
1½-1½-40	632	608	70.9%	70.7%
1-1-40	607	601	69.7%	69.7%

As can be seen the differences are very small and the statistical analysis of the figures shows no significant differences either for the total number of leaves or for the percentage infection.

An examination of the individual plot data showed that an abnormally high value for the amount of leaf present was obtained in the first plot examined, compared with the other plots in the first block and with the range of values shown between treatments in the other five blocks. A fresh statistical analysis based on five blocks was carried out for the number of leaves, but again no significance could be attached for the differences, though, as can be seen from the table, the difference between the normal spray and the two weaker sprays was increased.

An attempt was then made to combine the data for healthy and diseased leaves, since although the differences for total leaf and for percentage infection are statistically insignificant individually, it seemed possible that combined together the difference would be enhanced, since the data for the 2-2-40 spray showed both a higher leaf amount and a lower percentage infection, than the other two treatments. Obviously a diseased leaf is less valuable to the tree than a healthy one so that a fresh study of the data was made giving a lower value to a diseased leaf than to a healthy leaf. It was assumed for the purpose of this analysis that a healthy leaf was worth two diseased leaves and a new set of figures were obtained. From the total number of leaves counted, the number of healthy leaves were subtracted and multiplied by two. The figure so obtained was added to the actual number of diseased leaves counted in the field. This analysis was carried out for five blocks omitting the first block which showed excessive variability, and the figures obtained are given in Table II.

Table II.—Combination of Diseased and Healthy Leaf Observed (*5 Blocks*).

Treatment	*Diseased Leaf* + (*Healthy Leaf* × 2)
2-2-40	866
1½-1½-40	790
1-1-40	784

The statistical analysis carried out with these new figures showed a significant difference between the 2-2-40 strength and the two weaker strengths.

The general conclusion from these preliminary observations is that there is a risk of reduced efficiency with a reduction of strength below 2-2-40. On the other hand, the differences are quite small and it seems that a reduction in strength is better than no spray at all. Unfortunately it is too early to venture on any discussion of the economics of the situation.

For the moment, it is considered that a reduction below 2-2-40 cannot be advised for the hot weather spray, although small trials of lower strengths are strongly recommended so that information on the economics of the weaker sprays may be obtained. The mere fact that the weaker strengths are probably less effective is only part of the problem. With high prices and shortage of stocks of copper sulphate, some sacrifice of effective disease control may be a better solution than reducing the acreage treated. This obviously cannot be answered at once and the more experimental trials made the more readily can the situation be assessed.

The experiment reported here will be continued and progress reports published at intervals. Assistance will gladly be given in laying down small scale experiments capable of giving definite results on estates. It need hardly be stated that small well designed experiments will give quicker and more reliable results than larger single block comparisons although they entail a little extra trouble. It is hoped that in a limited number of cases it will be possible to collect leaf count data along the lines used in this experiment as experience has shown that they give a very satisfactory indication of the effectiveness of disease control treatments.

Grateful acknowledgments are due to the Experiment Station Staff who carried out the field experiments.

15th February, 1940. W. W. MAYNE,
U.P.A.S.I. Coffee Scientific Officer.

I.L.O. CONFERENCE TO BE HELD IN 1940

That, notwithstanding the war, the 1940 session of the International Labour Conference will be held at Geneva from the 5th June was the most important decision reached last week by the 89th session of the Governing Body of the I.L.O.; the agenda will consist of only one item: methods of collaboration between public authorities and employers' and workers' organisations.

The session, held at the special request of several extra-European countries, furnished a striking proof of the loyalty of the States Members and of their faith in the possibility of the I.L.O.'s carrying on its services to its constituents, whether neutrals or belligerents, even in war-time.

The Governing Body took note with lively satisfaction of several recent Government pronouncements to this effect: President Roosevelt, in a special message to the Havana Conference, had expressed the hope that there would be no lessening of the activities of the I.L.O. during the existing world emergency, and pledged his full collaboration in its constructive non-political international effort; by the Declaration of Havana, the Governments, employers and work-people of the American Continent had pledged their unwavering support for the continuance with unimpaired vigour of the efforts of the I.L.O. to accomplish its high purpose of achieving social justice; and in Great Britain, Lord Halifax, Foreign Secretary, and Mr. Ernest Brown, Minister for Labour, had assured Parliament that Government fully approved of the decision of the I.L.O. to continue its work during the war as completely as conditions would allow.

In response to the general desire that the special problems created by war and mobilisation demanded immediate attention, studies on the following questions, among others, were included in the 1940 technical programme of the I.L.O.: men disabled in war: their right to compensation and their vocational and social rehabilitation; problems or organisation of the labour market arising out of the war; vocational retraining as a continuous means of adapting the supply of labour to the demand; influence of the war and mobilisation on national regulations concerning hours of work and rest periods, and on the conditions of work of women; adjustment of wage rates to changing prices; adaptation of social insurance to mobilisation and war; industrial relations in colonial territories.

As migration problems would be accentuated as a consequence of the war, it was proposed that a meeting of the Permanent Committee on Migration for Settlement should be held on the occasion of the 1940 I.L. Conference.

INDIAN COFFEE CESS COMMITTEE

Review of the Activities of the Indian Coffee Cess Committee in India during the Fourth Quarter of 1939.

During the period under review, the Indian Coffee Cess Committee held its Annual Meeting on the 1st November, 1939. The Executive Sub-Committee met on the 31st October and the Market Expansion Sub-Committee the day before, for a detailed examination of the subjects coming up before the full Committee and to make their recommendations thereon.

2. As usual, at these Meetings, the Committee reviewed the coffee propaganda work carried out in India and the United Kingdom since its previous meeting. Rapid progress had been made in India under the system of departmental control of propaganda work introduced on 1st April, 1939. Nine Coffee Houses had been opened and work was in full swing in selected areas, such as Lahore, Delhi, Bombay, Secunderabad-Hyderabad and Kerala. The work in the Salem District had been brought to a successful close on the 30th September, 1939. The All-India Marketing Survey on Coffee started in 1936 was also nearing completion. A careful examination of the cost of the propaganda activities showed that a sum of Rs. 87,050 would be required during the current year and this the Committee sanctioned.

3. As regards the year 1940-41, diminution in the income of the Committee, depending as it does on exports of coffee, was to be expected under war conditions. An allotment of Rs. 69,500 for propaganda work in India represented the maximum amount the Committee could set apart for this purpose, consistent with the needs of other activities and the state of the finances of the Committee. This amount is almost entirely to be used in developing the work already started in selected areas in India, and in opening seven more Coffee Houses in such areas.

4. The same consideration of caution under war conditions led the Committee provisionally to fix the grant for the Indian Coffee Market Expansion Board, London, at £3,000 for the year 1940-41, but for the current year the Committee voted in full the grant of £4,100 the Board asked for its work.

5. The Committee also considered the question of broadening the basis of the cess levied on coffee, so as to make all coffee produced in India contribute towards propaganda expenses. The specific suggestion of the levy of an acerage cess on coffee did not meet with favour, and, in the absence of a more acceptable proposal for broadening the basis of cess, the question was dropped.

6. Another matter that engaged the attention of the Committee was a complaint from the trade in 'French Coffee' that the rules, issued by the Government of Madras to prevent adulteration in coffee, cause great hardship to them. These rules do not provide for the use of the term 'French Coffee' to denote coffee-chicory mixtures. Such mixtures are always to be described as coffee-chicory or chicory-coffee mixtures giving equal prominence to either constituent of the mixture and indicating its percentage. The Committee thought that, in the first instance, this question might be taken up with the Government of Madras by the Trade itself.

7. Mr. J. H. Sprott was elected Vice-Chairman of the Committee for the year 1940-41, and Lt.-Col. H. F. Murland, Captain J. D. Kothawala and Messrs. N. Kirwan, T. A. Kylasam Pillai, W. K. M. Langley,

R. C. Morris and Sylvester Pais were elected to the Executive Sub-Committee in addition to the Chairman and Vice-Chairman, who are *ex-officio* members of this Sub-Committee.

8. The Coffee Test Report, 1939, and the Annual Report of the Committee for the year 1938-39 were published during the quarter under review, and copies distributed along with the Monthly Bulletin of November and December respectively.

9. Reference was made in the previous Review to an India Coffee House opened at 66 Queensway, New Delhi. This Coffee House was formally opened on the 16th November, 1939, by the Hon'ble Dewan Bahadur Sir A. Ramaswamy Mudaliar, Commerce Member of the Government of India. A full account of this opening ceremony has been given in the Monthly Bulletin of the Committee for the month of November, 1939.

10. All the eight Coffee Houses opened earlier in the year made satisfactory progress during the quarter under review. With the Coffee House opened in October on De Lisle Road in Bombay, and another opened in December in Nampalli in Hyderabad, the total number of Coffee Houses run by the Committee stood at ten at the end of the year 1939.

11. The Demonstration Parties of Kerala continued to work at Thiruvella, Cochin and Calicut. The question of opening Coffee Houses in Kerala in support of the work of these Parties also engaged the attention of the Committee.

12. The Committee also participated in (1) The Mysore Dasara Exhibition, held from the 13th to the 28th October, (2) The Third All-India Swadeshi Agricultural and Industrial Exhibition, Tiruvannamalai, held from the 19th to the 30th November, (3) The Fifth Deepavali Khadi and Swadeshi Exhibition, held at Bangalore from the 6th to the 12th November, (4) The Seventh All-India Khadi and Swadeshi Exhibition held at Calicut from the 3rd to the 17th December, and (5) The Annual Rural Exhibition, held at Oollannoor from the 21st to the 23rd December.

QUO VADIS

Brave Nazi Luftwaffe, daring deeds are written in your annals!
The waters of your valour flow in least resistant channels,
For Polish cities, open towns, and even humble houses,
The very sight of citizens your Teuton anger rouses.
And while you vent your wrath on these, the nations stand aghast,
Your every action vindicates the vandals of the past.

Your noble pilots now have come across the foggy ocean,
To try and sooth their ruffled pride by taking of the lotion
That heals the hurt our 'planes have wrought by openly patrolling
Your Seaplane sheds, and naval base, to keep the ball from rolling.
And so you dive in bold attack upon our fishing fleet.
Your radio announcer will of course extol the feat!

Be careful not to penetrate upon our coast defences,
(Too many horses come to grief while taking wire fences,
They do not see the barb is there, and so they come a-tumble.)
But you, my Nazi pilots, I am certain that you tremble
The fact that while the eagle shows the colour of its claws,
The silent lion hides *his* steel beneath his velvet paws!

GNIPPIT.

JUDGING FABRIC QUALITY

The United States Department of Agriculture have produced in 'Farmers' Bulletin No. 1831' a pamphlet entitled 'Judging Fabric Quality' which may be of interest to farmers, but will certainly be of interest to farmers' wives. If farmers' wives can be catered for by a State Department in America, there seems no good reason why planters' wives should not also be considered, and we have therefore extracted some of the salient matter from this excellent pamphlet.

The Bulletin points out that the first point a consumer checks in a fabric is the identification of the fibre. Today many fabrics are composed of two, three, or even more fibres; synthetics are spun and finished to look like natural fibres, and many different finishes and treatments are given both to yarns and fabrics which must completely bewilder those who go by the rule-of-thumb methods of our grand-mothers.

Cotton is the first material dealt with, and with regard to this the Bulletin says:—

'*Pure Finish.*—In cottons, as with other materials, greatest satisfaction comes from fabrics that have a pure finish (are virtually free from removable sizing substances) and are woven firmly enough to hold their shape. Take, for example, two qualities of muslin. A good-quality muslin has a smooth, firm texture due to uniform yarns regularly spaced throughout the cloth. It looks practically the same after washing as before because the body depends upon the amount of cotton put into the yarn, not upon a finishing process or sizing material. A poor-quality muslin, on the other hand, has uneven yarns, perhaps defects in the weave, and excessive sizing that gives body to the fabric when it is new but disappears in the washing, leaving the cloth limp and porous.

Once in a while in cotton cloth the ply of the yarn—that is, the number of single strands twisted together to form the yarn for weaving—is used to denote quality. For example, in cotton broadcloth, particularly in men's ready-made shirts, the term "two-by-two" is commonly used. This means that both the warp and filling yarns are plied. In these materials there are about 225 plied yarns to the square inch. This makes a fine cloth. In "two-by-one" broadcloth only the warp is a ply yarn. The filling yarns are single. The material is coarser, and the total number of yarns to the square inch is much lower—approximately 175.'

The method of testing for cotton is as follows:—

'*Testing for Cottons.*—When a lighted match is touched to an untreated, all-cotton material, it burns quickly with a yellow flame that flashes along and is difficult to put out. The burning cloth gives off an odor of burning paper, burns almost completely, and leaves practically no ash. Mercerized cotton burns a little less rapidly than the untreated, and what ash there is, is black.

This burning test for cotton, or any other fiber for that matter, is satisfactory only when the fabric has not had some special finish and just one kind of fiber has been used. Cottons with a special finish sometimes burn with a flame similar to the untreated, but they char rather than burn completely, and the ash retains the shape of the original cloth.'

Linen is dealt with next; as readers are probably aware, the long fibres of flax ('line') are used for the finest linen materials, and the short and broken fibres ('tow') for such coarser fabrics as toweling, etc. Fabrics made from tow are less lustrous than those made from line, but bright rayon yarns are often used with tow to give greater lustre.

The natural colour of linen is gray; it is bleached either by chemical methods or by spreading on the grass in the sunshine; the latter method causes less weakening of the material. Many women buy half bleached linen instead of the fully bleached material; they know it has not been weakened so much and that it will gradually whiten during use. One test for linen is as follows:—

'*The break test.*—Without a microscope it is often very difficult to distinguish between linen and cotton. The two burn so much alike that the burning test is not satisfactory. They can, however, sometimes be distinguished by the break test. Ravel out a yarn and break it. An all-cotton yarn breaks with a brushy end; an untreated, all-linen yarn breaks with a pointed end. Linen yarns that have had a special finish may have a fluffy break like a wool yarn.'

Under the heading of Silk reference is made to the practice of weighting silks with metallic finishes, and the test for silk is given as follows:—

'*The burning test.*—Since it is impossible to tell how much weighting silk contains by the way it looks and feels, the consumer has to buy blindly unless there is a label stating "pure dye" or "weighted". Fortunately more and more manufacturers are putting labels on ready-to-wear garments, particularly if they are made of pure-dye silk.

But label or no label, the consumer can use the burning test on yard goods. Pure-dye silks burn readily with a small blue flame, which is easily extinguished. The odor is pungent, like that of burning feathers. The ash is black and shiny and forms in tiny, porous, brittle balls along the edge of the fabric. Weighted silk chars rather than burns and leaves a black ash of the same shape as the yarn or cloth. The odor is the same as that of burning unweighted silk, though perhaps not so strong.'

Woollen fabrics are dealt with at length (incidentally, it is spelt 'woolen', a habit for which we were severely and painfully criticised at school). Reference is made also to the practice of improving the texture of the fabric by incorporating hair, ostrich feathers, etc., to give a lustrous effect to the wool. The following home tests for wool are given:—

'*Home tests for Wool.*—The burning test may be used to determine whether or not a fabric is wool. This test is unsatisfactory, though, if other fibers are also present. Wool smoulders when ignited and gives off a disagreeable, acrid odor like that of burning hair. The crisp ash tends to ball up along the edge into an irregularly shaped mass.

Another way to identify wool at home is by the alkali test. It can be used for mixed goods containing wool and cotton, linen, or rayon. Boil a sample of the fabric for 15 minutes in a solution of 1 tablespoonful of lye to 1 pint of water. Since wool dissolves in a strong alkali solution, it will disappear and leave only the other fibers. This test cannot be used for silk and wool mixtures because the silk will dissolve also. However, these fibers look so different that they usually can be distinguished anyway. If not, a microscope affords the most accurate means of identifying the silk.

It is practically impossible for the inexperienced person to determine whether hair fibers such as mohair, camel's hair, or alpaca are mixed with the wool, but fortunately their presence is generally indicated by a label. In the not-too-distant future, the so-called synthetic wools made from proteins will probably present identification difficulties because of their similarity to wool in appearance and chemical composition. Then it will be even more essential to have the fiber content labeled, both as to the kind of fibers used and the amount of each.'

A section is devoted also to rayon and synthetics, and it is interesting to note that acetate rayon can be dissolved in acetone and in chloroform, which are used in such household goods as fingernail polish and spot removers. A test therefore, though a drastic one, of spun rayon and wool material is to place it in acetone, which dissolves out any acetate rayon and leaves a material with an extremely open work texture.

The Bulletin also includes notes on yarn and different weaves, and a reference to the importance of choosing the right weave for particular purposes, and concludes with a few pages on such subjects as colour-fastness, shrinkage, and special finishes. It appears to be a very complete little publication, and should be equally valuable in India and in America.

THE SECOND PRICE CONTROL CONFERENCE

Co-ordination of wholesale and retail prices, and the unification of the price controlling administration within a province by a single co-ordinating authority at the headquarters of the province, were recommendations made at the second Price Control Conference, held recently in Delhi.

The Government of India announced their decision to appoint shortly two Price Advisory Officers, one in Bombay and the other in Calcutta, mainly to study the nature and operations of forward markets in jute and cotton. These officers will merely act as information-collecting agencies.

The Conference, obviously, could take no decisions for all time to come. The first essential—that prices of agricultural produce should as far as possible be uncontrolled till a fair level had been reached—was reiterated. Two kinds of control were felt to be necessary: one at the primary stage or the wholesale markets and the second at the distributive or the retail stage and the retail market. The conference concluded that the question of dealing with wholesale markets or the primary stage was one which could not be taken by any single province much less by any district magistrate, but that it ought to be left to the Centre, if and when it considered necessary, to control prices in the wholesale markets. The profit-making in the retail market or at the distribution stage would then be controlled by the provincial Governments, on the basis of prices prevailing in the wholesale market at controlled rates, if control has been imposed by the Central Government or at an uncontrolled rate if the Central Government has not thought fit to control the wholesale prices.

It was recommended that, where price control on any large scale was necessary, it was desirable to have a Controller of Prices at the headquarters of each province. With the Controller should be associated an Advisory Board composed of representatives of interests affected by questions of price fixation—producers, commercial bodies, trading communities, consumers and so on.

The Controller would co-ordinate the policy of the district authorities and would be an intermediary between the Province and the Centre, to suggest action that may be taken by the Centre on occasions and to convey information from the Centre to those places where information on a scale larger than that of a single province was necessary for the pursuance of a proper policy of price fixation.

The conference discussed how far speculation in certain commodities affects the level of prices in those commodities or tends to increase unduly the price of other articles or commodities. Opinion was expressed that speculation in the forward markets did not by itself raise the prices of commodities though it certainly was a contributory cause.

The question whether these forward markets should be controlled was left open to be determined by the Government of India in consultation with the main provincial Governments affected and in the light of the experience and knowledge gained through the observation of the Price Advisory Officers.

DISTRICT NOTES

COORG

Minutes of the Extraordinary General Meeting of the Coorg Planters' Association held in the Bamboo Club, Pollibetta, on Monday, 22nd January, 1940, at 11-15 a.m.

Present:

Mr. Ivor Bull, M.L.C. (*Chairman*); Lt.-Col. H. F. Murland, M.L.C.; Dewan Bahadur K. Chengappa, B.A.; Rao Sahib M. S. Mandanna; Messrs. J. H. Sprott, D.F.C.; G. W. Scotland, B.SC., F.R.S.A.; J. F. Mackintosh, M.C.; W. A. F. Bracken; C. N. Subramanian; H. J. Cheesley; F. N. Betta; D. Narayana Shetty; E. R. W. Walker; J. O. F. Maurice; S. S. B. Ball; W. A. Davies; J. S. Youngman; G. M. Brameld; Abdul Rahaman Khan; R. J. W. Egerton; B. S. Bucknall; A. C. Thimiah; P. R. T. Punja; B. M. Appayya; and C. L. J. Humphreys (*Honorary Secretary*).

1. *Notice calling the Meeting.*—This, having been previously circulated, was taken as read.

2. *Minutes.*—The Minutes of the Extraordinary General Meeting held on the 25th August, 1939, having been published in the *Planters' Chronicle*, were taken as read. The Honorary Secretary read the *In Committee* items. They were then confirmed and signed.

3. *Technical Programme of the Scheme for Investigation into Coffee Quality.*—This has been circulated to all members and one suggestion regarding the manurial part of the Scheme had already been sent to the Commissioner. It was that a test should be made to compare the effects of Chloride of Potash and Sulphate of Potash on the Quality of Coffee. Mr. Sprott said he had written to Mr. Mayne and suggested that investigations should be made to show the effect of Organic manures as compared with Inorganic manures on Quality. As Mr. Mayne had replied that the matter should be submitted to the Imperial Council of Agricultural Research through the Commissioner of Coorg, he proposed that this be done by the Coorg Planters' Association. Mr. Ivor Bull seconded the proposal and it was passed unanimously.

4. *Dr. Burns' visit to Coorg.*—The Chairman considered that this visit had been of great value to the Province. The Coorg Planters' Association had submitted various proposals to Dr. Burns which had been circulated to all members. Already since his return to Delhi, Dr. Burns had proposed a Scheme for investigation into the growing marketing of Coorg Oranges. The Chairman suggested that the meeting should empower the C.P.A. Committee to study the Scheme so that if necessary further recommendations could be made to the Commissioner, through two of their members delegated for this purpose.

The meeting approved of these suggestions.

5. *Labour Department.*—Mr. C. L. H. Humphreys spoke *In Committee* of the work of the Labour Department.

6. *Coffee Marketing.*—The Chairman informed the Meeting that the proposals of the Marketing Sub-Committee of the Mysore Planters' Association had not received sufficient support for any action to be taken. Mr. J. O. F. Maurice said that during the last war the Greek Government had purchased 3,000-4,000 tons of Indian Coffee. He asked if steps could not be taken to obtain similar contracts this time. Col. Murland replied that the Indian Coffee Cess Committee were doing everything in their power to find new markets for Indian Coffee. At present, he stated, they were trying to arrange for larger shipments to France.

7. *Government Coffee Loan.*—Resolution proposed by Mr. C. L. J. Humphreys and seconded by Mr. G. M. Brameld:—

'That owing to the failure of this season's coffee crop, and the consequent difficulty in financing estates during the coming year, this Association requests the Coorg Government to postpone collection of the 1940 coffee loan instalment until March, 1941.'

The Chairman proposed the following amendment seconded by Lt.-Col. H. F. Murland:—

'(1) That this Association regrets that the Coorg Government has not seen its way to comply with the request that coffee loan instalments should be repaid over a period of ten years instead of five, the necessity for which had been repeatedly brought to the notice of Government.

(2) That in view of the failure of this season's coffee crop on the majority of estates and the continued low level of prices for coffee, this Association urges Government to postpone collection of the 1940 coffee loan instalment until March 1941 in the case of those estates where the crop has proved to be a failure.'

Lt.-Col. H. F. Murland speaking to the amendment said that the only reason for amending the original resolution was the fact that European representatives in the Legislative Council in Coorg had taken the same attitude for the past ten years in cases of similar resolutions. It was proposed at every meeting of the Coorg Legislative Council that owing to the failure of the paddy crops, a flat rate of remission of land cess be granted. The European representatives opposed this on the ground that those with good crops could afford to pay in full. Because some members found it difficult to pay their instalments, he saw no reason for a general remission. If the Government were requested to make a general postponement of the collection of this year's coffee loan instalments, there would be a deficit in the budget. This could only result in some new form of taxation to make up the difference.

Mr. R. W. J. Egerton pointed out that this was not a case of remission but of postponement.

After considerable discussion, it was then suggested by Mr. J. O. F. Maurice that instead of requesting a postponement, the Government be asked to extend the repayment period from three to six years. This was supported by Dewan Bahadur K. Chengappa.

It was finally decided that a deputation should interview the Commissioner of Coorg with a view to obtaining more favourable terms. If the Coorg Government proved unsympathetic, it was agreed to approach the Government of India.

8. *Date of Annual General Meeting.*—The Meeting approved of the Committee's recommendation that the above meeting be held on 19th April, 1940, at the North Coorg Club.

9. *Delegates to U.P.A.S.I. Meeting.*—The Meeting agreed to the Committee's recommendation that Mr. Ivor Bull should represent the Association at the forthcoming U.P.A.S.I. Meetings.

10. *Any Other Business*:—

(*a*) *Cinchona.*—Mr. J. H. Sprott, speaking on this subject, said he considered that the Coorg Forest Department should carry out experiments on the cultivation of Cinchona. He spoke of Mr. Wilson's scheme for its cultivation and of discussions which took place at the Imperial Council of Agricultural Research Council Meeting.

The Honorary Secretary was instructed to make the above suggestion to the Commissioner of Coorg.

(*b*) *Military Service for Planters.*—The Honorary Secretary read letters from Messrs. Peirce Leslie & Co., Ltd., and from the U.P.A.S.I. on this subject.

(c) *War Fund.*—The Chairman stated that the U.P.A.S.I. were considering the establishment of a War Fund and that an appeal from the President of the U.P.A.S.I. would be issued shortly. The object of this Fund was two-fold; (i) to ensure that help was given to disabled planters and to the dependants of those killed; and (ii) to support through the Viceroy's War Purposes Fund the many war appeals including the Red Cross and St. Dunstan's Hostel for Blinded Soliders, Sailors, and Airmen. It was proposed to allot 25% of the collection to the former and 75% to the latter. The only reasonable way to obtain funds, the Chairman suggested, would be to collect regular monthly subscriptions through the District Association Secretaries.

Mr. Sprott made the suggestion that the U.P.A.S.I. should keep in touch with all Planters in the Services as he considered it advisable, if the need should arise, that they or their dependants should be offered help rather than that they should apply for it. After the last War many families in desperate need made no application for assistance although funds were plentiful.

The Honorary Secretary referred to a circular he had received from the Honorary Secretary of the local centre of the Indian Red Cross Fund and St. John's Ambulance Association. He thought it would be unfair to expect members to subscribe to both the U.P.A.S.I. Fund and local funds.

It was eventually decided that the C.P.A. should support the U.P.A.S.I. War Fund when it started in March. In the meantime it was suggested that members might send subscriptions to the local Fund. It was decided that the C.P.A. Committee should administer the distribution of subscriptions to the U.P.A.S.I. War Fund collected through the C.P.A. In this way they could, if they wished, allocate a small proportion of the Fund to the local Red Cross Association. It was also decided that if members desired it they might ear-mark their donations for any particular Fund.

(d) *Motor Vehicles Taxation.*—The Chairman informed the Meeting that the Coorg Government proposed to alter the present rates of taxes for motor vehicles. He said that at present a private lorry weighing 1-1½ tons paid Rs. 22 per quarter and one weighing 1½-2¼ tons paid Rs. 28 per quarter. The proposed rate was Rs. 135 per quarter. He said that the Committee considered these rates unduly high and recommended that a deputation should interview the Commissioner of Coorg.

It was pointed out that lorries not plying for hire were now paying Rs. 70 per quarter and the proposed rate was Rs. 135 per quarter. The Chairman suggested that the Government should be requested to tax lorries not plying for hire at two-thirds the rate of a vehicle which plied for hire.

It was pointed out by Mr. Sprott that Coorg had no railway and was entirely dependant on road traffic.

After discussion, it was decided to leave the matter to the Committee.

(e) *Cardamom Research.*—The Honorary Secretary read a letter from the U.P.A.S.I. stating that a special ad hoc Committee was being appointed to deal with this subject. The C.P.A. had been asked to appoint a representative.

Mr. J. H. Sprott proposed and Mr. F. N. Betta seconded:—

'That Mr. Ivor Bull be appointed.'

This was unanimously approved.

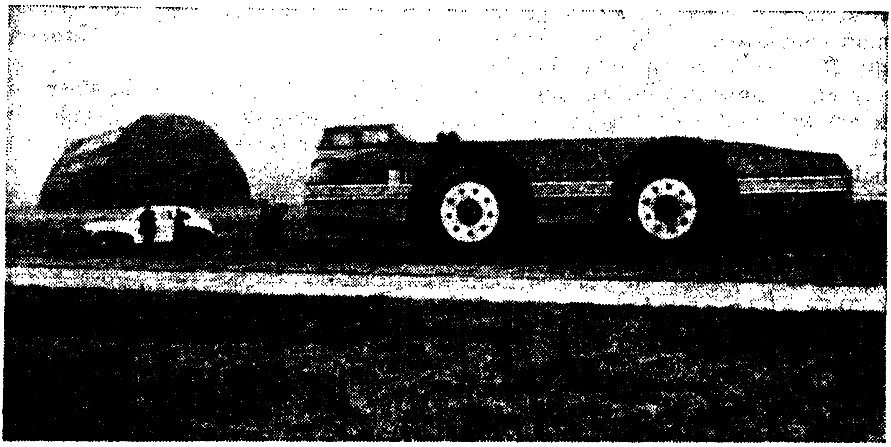
(f) *Budget for* 1940-41.—The Honorary Secretary read a detailed estimate of expenditure for 1940-41. The Meeting approved the Committee's recommendation that subscriptions for Personal Members should be fixed at Rs. 5 per annum. They also decided that other subscription rates should remain as at present.

This terminated the Meeting.

C. L. J. HUMPHREYS,
Hon. Secretary.

IVOR BULL,
Chairman.

SNOW CRUISER FOR ANTARCTIC



On August 9th, Goodyear turned out its 300 millionth tyre. This in itself is news—but the news becomes doubly important when the 300 millionth tyre happens to be one of the largest tyres ever built and one that will be used on a snow plough which will explore the Antarctic regions.

The tyre that will bear the number 300,000,000 is in itself unusual and will have an unusual purpose. It will be the first of six giant casings (120 x 33.50-66) that are being constructed for the Research Foundation of the Armour Institute of Technology, and will be fitted on a huge 'snow cruiser' to be used in exploring the frozen wastes of the Antarctic continent.

Designed by Dr. Thomas Poulter, a member of the Foundation staff and second in command of the Second Byrd Antarctic Expedition, the snow cruiser will be 55 feet long, 15 feet wide and 15 feet high, will weigh 75,000 pounds loaded, and will carry sufficient fuel and supplies to allow its crew of four to remain away from permanent bases for a year at a time. Goodyear's 300,000,000th tyre and its five mates will be the biggest ever manufactured for actual use on a motor vehicle, being 10 feet in overall diameter, nearly a yard in cross section and of 12-ply construction.

Special precautions were necessary in manufacturing this tyre to keep the rubber pliable in the Antarctic temperatures which go as low as 72 degrees below zero!

ENTERTAINMENTS TAX ACT

Some of our Planting-Members have recently sought our advice regarding their liabilities under the Entertainments Tax Act in cases where entertainments for the labour forces on estates are sanctioned by the estate owner or manager; and as the questions they have raised are of general interest, we publish this short note for the information of Members.

Entertainments tax is leviable on all payments for admission to an 'entertainment'. An 'entertainment' includes 'any exhibition, performance, amusement, game, sport or race to which persons are admitted for payment'. If no admission fee is charged, no tax is payable.

Certain entertainments are exempt from the tax even when an admission fee is charged. The most important of these are industrial and agricultural exhibitions conducted by institutions not established for profit; entertainments of wholly educational character; and entertainments of which the entire *gross* proceeds are devoted to philanthropic, religious or charitable purposes.

In addition to these exemptions, it is possible to obtain a refund of the tax if the Provincial Government are satisfied that the whole of the *nett* proceeds of an entertainment have been devoted to philanthropic, religious or charitable purposes, and that in calculating the nett proceeds, not more than twenty-five per cent of the gross proceeds have been deducted on account of expenses.

Applications for exemption must be made to the Local Entertainments Tax Officer not less than seven clear days before the date of the entertainment; in the case of applications for refund, notice of the intention to claim a refund must be given to the Entertainments Tax Officer before the entertainment takes place, and the application must be made within fifteen days after the entertainment. All these applications must be made by the person responsible for the management of the entertainment.

Every person who is responsible for the management of an entertainment (he is technically referred to in the Act as the 'proprietor') must give at least three days' notice of the place, date, time and nature of the entertainment to the Entertainments Tax Officer; and in any area where the local authority has *not* been authorised to collect the entertainments tax on behalf of the Government, a similar notice must be given *also* to the village headman *and* to the officer in charge of the Police Station which has jurisdiction over the place.

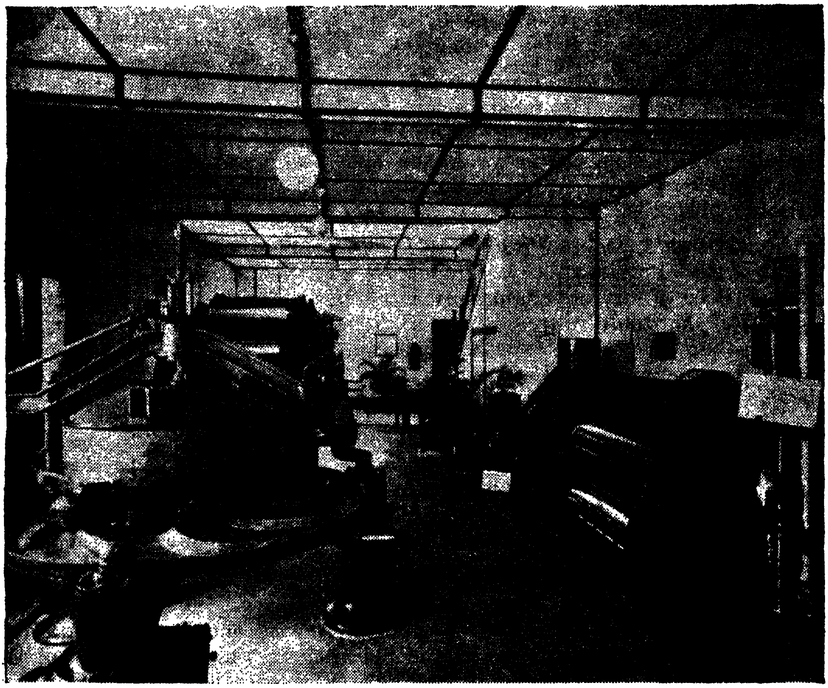
This notice must be given by the person who is responsible for the entertainment; *but there is an additional notice which must be given by the owner or the person in charge of 'any theatre, hall or other premises' which may be let out for the purposes of an entertainment* which is liable to the tax. This is the form of notice which most directly concerns the proprietors or managers of estates who may permit an entertainment to be given on the estate property.

The owner or person in charge of the premises where the entertainment takes place must give notice of the entertainment to the Entertainments Tax Officer, *and* to the officer in charge of the Police Station. The notice must be given at least three days before the entertainment and must specify the date and time of the entertainment and its nature, and must also give the name and address of the 'proprietor' of the entertainment.

Failure to comply with this rule (which is Rule 48 of the Entertainments Tax Rules 1939) is punishable with a fine which may extend to Rs. 500.

Any reader of the *Chronicle* who is likely to be affected, is strongly recommended to buy a copy of *The Madras Entertainments Tax Act, 1939, and the Rules and Notifications issued thereunder*, which is obtainable from the Superintendent of the Government Press, Madras, at a price of two annas.—G. E. W., in the *South Indian Bulletin.*

SIROCCO MACHINERY IN COLOMBO SHOWROOMS



The photograph above shows some of the machines on view at the Colombo Depot Showrooms of Messrs. Davidson & Co., Ltd., Belfast. The Depot, which is situated at Forbes Road, Maradana, provides facilities for inspection of the latest designs of the well-known range of Sirocco Tea Preparing Machinery. Visitors have the opportunity of discussing the various technicalities of the machines with the Company's engineers who, as representatives of one of the leading firms in this line, are in touch with the latest developments; and a visit to these new Showrooms should prove of the greatest interest to those engaged in Tea Production.

AVERAGE PRICES OF COMMON TEAS
JANUARY, 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	6	0	8	2
Tanjore	0	8	9	0	9	5
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	9	0	9	3
Tiruvarur	0	8	7	0	9	3
Pudukottah	0	7	10	0	8	6
Karur	0	8	4	0	9	5
Erode	0	8	2	0	8	8
Tiruchengodu	0	8	0	0	8	6
Namakkal	0	8	4	0	8	11
Salem	0	8	1	0	8	9
Dharmapuri	0	8	1	0	8	7

'TROPICAL NEURASTHENIA'

The following paragraphs from the Annual Report for the year 1938-39 of the London School of Hygiene and Tropical Medicine should be of interest to those readers who have encountered cases where people have been unable to adapt themselves to a tropical environment:—

Although most of the researches of the Department of Medical Industrial Psychology are concerned with problems of industrial life at home, yet many problems of life abroad are of a similar nature. All work, whatever its nature, involves at least two aspects. In the first place there is the environment, both material and psychological, in which that work must be done, and in the second place there is the person who has to do the work. It is recognised that for success it is not enough to have the technical qualifications and physical fitness for the work; there must also be emotional balance—in other words temperamental fitness. The problem of selection for work abroad is much more complicated than is usually supposed. To be dissatisfied with home conditions, or to have been unsuccessful in them, is no foundation for success abroad, although the technical and physical qualifications are good.

Faulty selection can result in inefficiency which may show itself in a person's inability to get on with other people (e.g. those in authority, or subordinates or equals), or in much sickness absence, or in a futile sequence of short-time posts.

The environment is commonly blamed for sickness on inadequate evidence. For example, a fairly common diagnosis is tropical neurasthenia, and search of the literature reveals many assumed causes of this condition. The group of cases once called 'neurasthenia' has, however, been so whittled down by the recognition of anxiety states, cyclothymia, and other classifiable disorders, that very little is left of the original group. When the individual can be scrutinised in the light of modern teaching, tropical neurasthenia is found to cover every variety of minor and major mental disorder, from discouragement and dissatisfaction expressing themselves as physical symptoms up to recognisable insanity, with a heterogeneous collection of hysteria, anxiety states, and obsessional conditions in between.

It follows, therefore, that the conception of tropical neurasthenia as a disorder of certain climates must be replaced by the hypothesis, not yet statistically established, that there may be an excessive prevalence of minor and major mental disorders in the tropics, but whether this is determined chiefly by climate, occupational, social, or economic factors in the environment, or whether there is a self-selective tendency at work by which home-misfits vainly seek a new environment for their maladjusted personalities, are questions that can yet be answered. There is, however, no doubt that the problem is one that calls for adequate research.

Morris, Alfred Rosslyn, died suddenly on 14th February at his residence in Yercaud, aged 55 years.

The late Capt. A. R. Morris was the Manager of the Woodlands Estate, Shevaroys, for the past six years.

GIFTS OF COFFEE FOR CANADIAN TROOPS

With reference to the appeal for gifts of coffee for the Canadian Troops sent you by the Secretary, Indian Coffee Cess Committee, Bangalore, in his letter No. 2277, dated the 2nd instant, *bags* of 'B' grade coffee weighing 1 cwt. 2 qrs. 14 lbs., as prepared for shipment, will be acceptable. The five estates on the Billigirirangans are giving a bag each; and it is hoped that most estates in other districts will do likewise.

HONNAMETTI ESTATE,
8th February, 1940.

R. C. MORRIS,
Vice-Chairman,
Indian Coffee Cess Committee.

SOUTH INDIAN TEA RE-EXPORTED FROM CEYLON

During the month of January, 1940.

Destination	*Lbs.*
United States of America	354,109
Continent	1,746
Australia	311,877
Iraq	15,681
Other Countries	73,238
Canada	95,151
Total	851,802

TEA QUOTA PRICES

The Quota prices ruling in South India on 28th February were:—

Tea Export Quota ... 5 annas 7 pies (approx.)
Internal Market Rights ... 1-2 pies per lb.

In Calcutta Export Quota was quoted at 5 annas 6 pies to 5 annas 9 pies per lb. (nominal).

Internal Consumption Quota was quoted at 2 pies per lb.

DESTRUCTIVE INSECTS AND PESTS ACT, 1914

The Government of India, Department of Education, Health and Lands, have issued a notification No. F. 46-20 (3)/38-A., dated 6th December 1939, stating that a reciprocal arrangement has been approved by the Governments of Burma and India whereby imports of coffee from one country into the other must be covered by a certificate of origin signed by the Collector of Customs.

It is a condition of this agreement that the Government of the exporting country will inform the Government of the importing country of any serious outbreak of coffee disease within its territories. Planters are therefore asked to notify this Association of any new outbreak of coffee disease in their area.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sales Nos. 33 and 34 were held on 12th, 14th and 20th February 1940.

DESCRIPTION	Season 1939-40			Average on same date	
	Sale No. 33	Sale No. 34	Average to date	In 1938	In 1937
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	10 6	...	11 5	9 7	...
For Internal Consumption:—					
Leaf Teas ...	3 6	3 7	4 4	3 3	3 9
Dusts ...	4 4	4 7	4 5	3 9	4 1
Green Teas ...	4 8	7 3	5 11	3 10	...

RUBBER.—London Rubber on February 26, 1940, 12 13/16*d*.

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on Feb. 13 & 20, 1940
Barham	77
Chamraj	1.12
Chinnar	.72
Deviview	1.09
Kadalaar	.80
Kanniamallay	86/88
Kil Kotagiri	1.13
Malakiparai	79
Manalaroo	80
Moongalaar	78
Nonsuch	1.04
Parkside	1.11
Pullivasal	82

South Indian Tea—*(contd.)*

	Sales on Feb. 13 & 20, 1940
Singara	1.12/1.18
Vagavurrai	90
Yendayar	68

Rubber

	Sales on Feb. 15, 1940
Ribbed Smoked Sheet ...	54 to 54¾
Contract Crepe ...	55
Mottled Brown Latex Crepe	51 to 53
Brown Scrap Crepe ...	51 to 51½

The Madras Market

Current on 29th February, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

The above report is written on the eve of the Budget announcement. When markets have had time to digest the possible effects of Government's taxation proposals one can look forward to more confident conditions on the Indian Stock Markets. Actually, most of the leading counters close above their lowest for the fortnight and although the volume of business is still restricted the undertone generally appears stronger and if the Budget gives any cause for encouragement this will be quickly reflected in a more buoyant stock market. In so far as local planting shares are concerned the general undertone has ruled very steady and at the close an improved demand for most of the leading rubber shares is noticeable.

Rubber.—After being over 13*d.*, the price of raw rubber is slightly easier at 12⅝*d.* A certain amount of investment support has been in evidence for the leading issues and a good turnover was reported in Cochin Malabars at Rs. 6-8 as., with buyers over. Kalpettas were firmer at Rs. 16-8 as. bid while Thirumbadis have risen from Re. 1-5-6 ps. to Re. 1-12 as. Malankaras were steady at Rs. 38 but Vaikundams were offered in small parcels at Rs. 8. Tropical Plantations were unchanged at Rs. 16. Among Sterling issues Pullengodes changed hands at 1*sh.* 3½*d.*, Malayalams at 33*sh.* 6*d.*, and Rani Travancores at 12*sh.* Undoubtedly with rubber at its present price most well run companies in Southern India must earn substantial profits and on a shilling price of rubber the shares of most of the leading rubber companies are definitely undervalued. In 1937 investors lost bitterly in buying rubber shares in anticipation of a boom that never materialised and on that account the present rise in the price of the raw commodity is treated with some suspicion. It is unlikely therefore that any large revival of interest will take place in this section until the benefits of a high price for rubber are actually disclosed in increasing dividends.

Tea.—A small but steady business has been transacted in most of the leading tea shares. Periakaramalais were steady at Rs. 17-12 as., cum the second interim dividend of 5%, and United Nilgiris at Rs. 112 buyers. Highland Produce were also in demand at Rs. 24-8 as., while Peermades could be placed at Rs. 25-13 as. Chembra Peaks were easier on the other hand at Rs. 2-15 as. buyers, Rs. 3 sellers while Vellamalais were offered in small parcels at Rs. 10-4 as. Among planting debentures a fair turnover has been possible in Ouchterloney Valley Debentures at Rs. 101 while Vellamalai 7% Debentures were in strong demand at Rs. 104.

FORTNIGHTLY RAINFALL STATEMENT

February 4, 1940 *to February* 17, 1940—(*Inclusive*).

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty ...	...	...	124·36	124·36	25. Kotagiri ...	...	...	56·53	56·53
3. Kallar B'dge	0·25	...	162·18	162·43	26. Ootacamund...	...	...	55·71	55·71
4. Koney ...	1·41	...	122·29	123·70	27. Yercaud ...	...	...	72·00	72·00
8. Twyford ...	1·56	...	242·65	244·21	30. Devarshola T.E.S. ...	...	...	77·58	77·58
9. Pettimudi ...	0·36	0·36	328·51	329·23	31. CALICUT ...	...	...	115·29	115·29
10. Kalaar ...	0·15	...	236·44	236·59	32. Kuttiyadi ...	...	...	191·73	191·73
11. Chittavurrai...	...	...	41·46	41·46	33. Vayitri ...	...	...	151·16	151·16
12. BODI'KANUR ...	...	...	20·17	20·17	34. Manantoddi...	...	...	83·97	83·97
13. COCHIN ...	...	...	131·21	131·21	35. Bilgiris ...	0·18	...	66·40	66·58
14. Mooply ...	...	...	130·62	130·62	38. Pollibetta ...	...	...	61·18	61·18
15. Pachaimallai	...	...	125·74	125·74	39. Coovercolly ...	N.R.	N.R.	74·22	...
16. Mudis ...	...	...	179·59	179·59	41. Kadamane ...	...	...	265·55	265·55
17. POLLACHI ...	...	...	33·06	33·06	43. Merthisub'gey	...	...	99·02	99·02
18. Ropeway Waterfall ...	0·15	...	97·01	97·16	45. Balehonnur ...	N.R.	N.R.	88·54	...
21. Kerala Estate	N.R.	N.R.	148·85	...	46. MANGALORE ...	...	...	116·41	116·41
22. Naduvattam	...	...	118·33	118·33	47. MADRAS ...	...	...	33·82	33·82
24. Coonoor ...	...	...	48·66	48·66					

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The Tea Scientific Department have published in Paper No. 1 dated January 1940 some notes on manuring tea, with special reference to war-time conditions. In the preface, it is stated that the Paper 'has been written with the express purpose of presenting in concise form the more important factors in manuring tea, in the hope that these factors, and some other suggestions which are made, will help the planting community to decide on their general programme of manuring and management, during the war period when purchased fertilisers will rise in price, and when some of the more commonly used manures and fertilisers may not be available at all. If it will help the planting interests to get the best value for money and to maintain the capital value of their land, it will have fulfilled its purpose. At this time it is doubly unfortunate that manuring data is so meagre for our peculiar conditions in South India. A start has been made and all going well we shall have some direct evidence before very long. Meanwhile we cannot do better than study carefully the valuable data which has been obtained elsewhere, notably in N.-E. India and Ceylon, and try to apply that evidence to the rather different conditions as they exist in South India.'

Section I of the Paper gives some general notes on manuring and deals in turn with Nitrogen, Phosphoric Acid, Potash and Bulk Manures, and summarises the results obtained from experiments in the various tea districts in India, Ceylon and Java. Section II is devoted to green manure crops and green manuring, and the following summary of results is given:—

'(1) To begin with there will be a depression of yield due to competition between the legumes and the tea, and the consideration that its presence reduces the availability of manures.

(2) The yield will catch up, and finally increase very considerably after the removal of the legume crop, due to the rotting in the soil of

loppings and the absence of competition. A very large profit is shown in balance, and throughout there is no deterioration of soil—on the contrary, improvement.

(3) The good effect is long lasting.'

There follows a note on the different species of green manure crops suitable for use on estates, together with an analysis of various kinds of green manures. The Section closes with some useful notes on the growing of these green manure crops.

Section III deals with compost and composting methods, which, it is pointed out, increase in importance with the increase in cost, and possibly scarcity, of purchased fertilisers. The Section outlines the Indore, Lincoln, Fowler, Adco and Dacca methods.

In Section IV a few paragraphs are devoted to the subject of manure from waste lands, and the Paper states:—

'Waste land can be used in two ways: either to take from it such vegetable matter as it produced naturally, or to grow in such land special crops which can be cut and carried to tea areas. If the waste land is left to produce its normal quota of green material, then as more and more such material is carted off, the land must deteriorate. Apart from the fact that it will give less green material in future years the deterioration even of waste land should be avoided so far as is possible. The time may come when it will be useful for nurseries, for extending the tea area or for growing some other cash or feeding crop.'

The conclusion is drawn that it is preferable, wherever the waste land lends itself to the practice, to make use of it by growing leguminous nitrogen fixing green manures, and gives notes as to the most suitable to grow.

Section V deals with the rate per acre of application of purchased fertilisers and includes also notes on the areas most likely to deteriorate without manuring, and on the effect of weeds in tea. On the credit side, it is pointed out that weeds in tea have great value in preventing soil erosion, and represent a source of organic matter which is returned to the soil and form a protective cover for the soil. Against this it is acknowledged that weed growth in tea reduces crop. On the question of moisture competition, the Paper says:—

'There is in some quarters strong objection to the presence of weeds in the dry weather on the grounds that they compete with the main crop for moisture. Moisture undoubtedly is lost to the soil by transformation from the green parts of weeds. However, most of the weeds which we favour for tea are very shallow rooted—and tea obviously draws a part of its moisture in the dry weather from great depths in the soil; and there is the added fact that a good many of them die off in the really dry weather. Consequently it is the heavy rains in the early spring when there are practically no weeds which cause a major part of the erosion to which our tea lands are subject.'

The Paper concludes with a forecast of the position of imported fertilisers, and certain points to be noted in their purchase.

Copies of the Paper are being issued free to subscribers to the Department; non-subscribers may have copies on application to this office at the price of Rs. 3 per copy.

U. P. A. S. I. SCIENTIFIC CONFERENCE, JULY 1939

The following memorandum by Mr. Cooper, and notes thereon by Dr. Harler, will, it is believed, be of interest to readers of the *Chronicle*.

Only one minor point requires editorial comment. It is suggested in the memorandum that there were errors in the reporting in two places. In the first of these, the wording is as passed by Dr. Harler himself; in the second, the report of Mr. Carpenter's remarks (page 14 in the 'Supplement', page 136 in the *Year Book*) is apparently what was understood by those present at the meeting; moreover, what Mr. Carpenter was understood to have said was repeated by Dr. Harler (page 15 in the 'Supplement', page 137 in the *Year Book*), and was not questioned. It will be appreciated that a reporter finds great difficulty in obtaining an accurate record at a technical conference of this kind, but as far as possible efforts were made to let speakers see the report of their remarks, and the utmost care was taken in editing the report of the conference.

Mr. Carpenter has since commented as follows:—

'The important point to note in regard to shade trees is that I gave an instance in regard to the effect of shade and its value on many areas in North-East India. It could not have been a general statement as such is not possible since different trees, different soils, different climates and different tea bushes all contribute towards a difference in the final result. I could do no more than refer to a particular useful example that occurs in North-East India.'

Memorandum dated 8th January 1940 by H. R. Cooper Esq., Chemist, Indian Tea Association Tocklai Experimental Station:—

The discussions are of great interest, and some decisions are recorded. Those of Mr. Mayne on shade trees in coffee are supported by sound records of experience, but many problems are left unsolved. It is curious that no attempt at investigation of these problems by accurate experiment is recorded or even projected. Presumably the element of doubt concerning the continuance of the Scientific Department is mainly responsible for preventing the laying down of long term experiments. Possibly in some cases the complexity of the problem is a deterring factor. This view seems to be taken by Dr. Harler with regard to manufacturing experiments in the last para of page 145.

'In carrying out manufacturing experiments, Dr. Harler added, it was possible to be too scientific, and to duplicate procedure with two lots of leaf too closely. . . . The best must be made of the leaf, so that manufacture of the crop from the treated plots may need to be different from that of the crop from the check plots.'

Dr. Harler is reported as saying 'plot', not 'plots', but it is assumed that the implied absence of the essential replication is an error in reporting.

Dr. Harler's note is apt; but it is, in fact, a plea that experiments must be *more* scientific.

To take the case under discussion, the effect of potash as manure on quality must be determined, not under one specified set of conditions but under several sets of conditions such as might be used in practice. The work involved in such complex experiments does at first sight appear appalling, but they can and must be done if sound information is to be obtained. Modern statistical methods reduce the work to manageable proportions.

Any experiment should be so designed that not only the 'main effects' but the 'interactions' between these main effects also are determined.

Such a case is provided by the effects of shade trees and of nitrogenous manures. Mr. Carpenter is incorrectly reported as stating that 'shade increases crop as much as an annual dose of 30 lbs. nitrogen and that shade plus 30 lbs. nitrogen did not give the same increase as no-shade plus 60 lbs. nitrogen'. The effect of mature shade trees must vary under different conditions and has, in fact, not been measured under any set of conditions, nor has the amount of the interaction between mature shade and nitrogenous manure. Mr. Carpenter gave these figures as rough estimates merely in illustration of the kind of interaction which we believe to exist. Experiments are now in progress, at Borbhetta, and on several commercial gardens in North-East India, which will measure the effect of several species of shade tree, at several distances apart from planting, on several soils, and in several districts, and also the interactions 'shade × manure' under each of these conditions. 'Manure' includes potash and phosphoric acid as well as nitrogen.

Dr. Harler states 'All the Tocklai manuring results have been obtained on unshaded well-tilled soil, kept practically clean of weeds. They hence have only a remote relationship to results obtainable under practical conditions, and, indeed, recent estate trials in Assam have shown that in 4 cases out of 6, sulphate of ammonia gave no increase. We may expect soon a marked modification in manurial recommendations from Tocklai, amounting practically to a volte face.' This statement shows some confusion of thought, and it disregards published information. It cannot be allowed to pass unchallenged.

Confusion of thought is shown in the implied assumption that 'practical conditions' always represent the same set of conditions. It appears that, in Dr. Harler's estimation, 'practical conditions' for tea are such that the tea is grown under shade trees, and with a reasonable amount of weeds among the tea. He does not specify the species of tree, nor how closely the trees are to be planted nor does he specify the species of weed (except that it must be 'soft') nor the density of cover of soft weeds to be allowed. There will be very considerable variation in the conditions conforming to Dr. Harler's definition of 'practical conditions', and the response to nitrogen will vary accordingly.

The conditions, under which the earlier Tocklai manuring experiments were made, do represent one set of practical conditions, in respect of shade and in respect of weeds.

Some of the best gardens in Assam use no shade, while very few use anything approaching heavy shade, on account of the general opinion that shade reduces quality. For the same reason, many gardens in Darjeeling use no shade. Indeed, it is extremely doubtful whether shade ought to be used on those areas which are frequently in mist during the growing season: they need all the sun they can get.

Large areas in the Dooars, the Terrai and the Surma Valley, are without shade. This generally is because shade was believed to increase mosquito blight attack, for which reason good shade frequently has been removed. In most such cases, though not in all, shade is now being established, but the process is slow and often difficult.

When the earlier manuring experiments were started, the common practice on the best gardens in Assam was to give an annual cold-weather hoe to at least 9 in. deep, and either a much deeper hoe or trenching about once in four years, while about 12 light hoes annually were aimed at: managers who did not get in at least 9 light hoes would have been asked for an explanation by their agents. As a result of Tocklai's work, it is now recognised that so much cultivation is unnecessary; but all the evidence including that from Ceylon, shows that growth of tea is best in the complete absence of weeds. Weeds are useful in reducing erosion on sloping land, but in that case they must be looked upon as necessary evils, and not as useful in themselves.

The Borbhetta manuring plots, to which Dr. Harler refers, get 5 to 6 light hoes annually. Except where thick cover of tea bushes (due to heavy manuring) suppresses weeds, these plots are as weedy, between rounds of cultivation, as any good garden in Assam is ever allowed to be.

It is recognised in North-East India, and in Ceylon, that crops of tea can be increased profitably by the use of manures, and the object of these trials is primarily to compare the relative efficiencies of various manures among themselves. This particular object is most accurately achieved in the absence of disturbing factors. The determination of interactions with such other factors can, and will, come later. In the meantime our experiments on commercial estates indicate in a very practical manner, how far our Borbhetta results apply to commercial practice. Our knowledge of the commercial application of these results will be extended even further as our District Advisory Officers carry our investigations into the Tea Districts themselves.

Further confusion of thought is shown in the statement, 'We may expect soon a marked modification in manurial recommendations from Tocklai, amounting practically to a volte-face.' The object of Tocklai is research in the hope of discovery of new information. If Tocklai's recommendations are never modified, it will mean only that it has failed to obtain fresh information. We sincerely hope, therefore, that its recommendations will be modified, but those principles which are soundly established by accurate experiment can never be completely changed.

The disregard of published information is shown,

(1) by the surprise exhibited by Dr. Harler over Mr. Carpenter's mention of the interaction between the effects of nitrogenous manure and of leguminous shade. This was very fully explained in I.T.A. Memorandum, No. 6, published over five months before the Conference of July 27th.

(2) by the statement that 'recent estate trials in Assam have shown that in 4 cases out of 6, sulphate of ammonia gave no increase'.

Memorandum No. 6 reports results of 34 experiments on commercial estates in North-East India (including Tulsipara). Of these, 22 gave statistically significant increases in crop from sulphate of ammonia; 11 showed differences less than the calculated significant difference; and one showed a statistically significant loss in crop from the use of sulphate of ammonia. The loss was on a rich bheel soil (Poloi) heavily attacked by mosquito blight.

Of the 11 which showed no significant effect in the first year of manuring, five were on soils where no effect from nitrogen was expected, either bheel soils, or soils very heavily shaded: of the remaining six, four (Durgakhuna, Khoreel, Chandrapara, and Singala) showed statistically significant increases from sulphate of ammonia in 1938. These later results were reported in the Annual Report for 1938.

(3) The question 'Under Tocklai conditions potash and phosphoric acid give no return. Will this be the same under practical working conditions?'

Memorandum No. 6 reports results of 26 trials of potash and phosphoric acid, both separately and together, on commercial estates. None showed any significant difference due to either potash or phosphoric acid, and in only one case did potash and phosphoric acid used together give a small but statistically significant increase in crop. In 1938, two other cases of small but significant increase, from phosphoric acid, appeared, but none from potash. More such cases may appear as the experiments progress, but the fact is established that potash and phosphoric acid are generally of little *relative* importance, while a need for nitrogen is very general.

Dr. Harler also asks 'I should like to know the difference between the return given by sulphate of ammonia on a clean weeded soil and one on which a reasonable amount of weeds grow'.

Stated in more general terms this question is

'Is there any interaction between the effect of sulphate of ammonia and the effect of weeds?'

We also are interested in this question, and therefore have laid down an experiment to answer it. This is not the place to record the results in 1939, the first year of experiment; but Dr. Harler and others interested will be able to see results in successive annual reports. St. Coombs in Ceylon also has interesting experiments on cultivation which will answer Dr. Harler's question, for Ceylon conditions. It is hoped that South India also may lay down cultivation experiments, preferably determining a different interaction, perhaps 'cultivation and shade'.

Dr. Harler substitutes for a desire for information a confession of faith. 'I do not doubt that the right way to work our tea areas is to shade well, to let soft weeds grow, to cover the soil with the bush if possible, and to give minium cultivation. Under these conditions the return from artificials will be small.' The available evidence indicates that in these beliefs he is very close to the truth: but most planters will want to know what constitutes shading 'well': it is certainly not a case of 'the thicker the better'. Planters will also want to know which soft weeds and how much of them should be allowed: why it should not always be possible to cover the soil with the bush: what constitutes minimum cultivation for economic effect: and whether the return from the 'small' effect of artificials is profitable or not.

In another place (in connection with replanting, top of p. 144) Dr. Harler states 'we should be able to make and maintain a crop of 600 lbs. per acre without the aid of fertilisers.' That we certainly should be able to do, but few planters will be satisfied that such a very moderate crop is the most profitable.

Dr. Harler's further statement 'if we want spectacular returns from the use of artificials, the soil must be raped, it must be run to a standstill with dire results for the next generation,' is difficult to understand unless he defines 'spectacular'. If he means that even the maximum artificial dressing used in practice, in any tea district, will do anything but good, then it may be stated with confidence that his statement is made not only with absolutely no evidence to support it, but that it is contrary to all the existing evidence bearing upon the point.

Certain plots at Borbhetta, in 1939, which was the tenth year of annual application of 120 lbs. inorganic nitrogen per acre, yielded 1,584 lbs.

per acre of fine tea. The soil is *improved* both in organic matter content, and in physical condition, by this treatment. A reasonable supply of organic matter no doubt is of benefit to a soil, but this requirement is fully supplied to these plots by the annual return to the soil of 6½ tons per acre of light prunings, containing 5,000 lbs. of dry organic matter, and 95 lbs. of organic nitrogen.

At Rothamstead Experimental Station in England, after about a century of artificials on continuous wheat, with no organic matter but the stubble and weeds ploughed in, better crops per unit of nitrogen are maintained than from continuous use of cattle manure over the same period.

The Borbhetta plots, like those at Rothamstead, lose no soil by erosion.

Loss of soil by erosion is a problem which afflicts North-West India less than Ceylon and South India; but we have slopes very liable to erosion, in Darjeeling, the Surma Valley and the Dooars. Many of these slopes in the Surma Valley and Dooars have been very successfully replanted, in spite of very bad treatment previous to replanting. One great difference between Ceylon and North-West India to which no speaker at the Conference drew attention, is that North-East Indian soils generally have great *depth,* while those of Ceylon are commonly close on a rocky subsoil.

We now try, and fairly satisfactorily, to keep our good top soil in North-East India; but where we have lost it, we could grow good tea on the subsoil which remains, even with the aid only of artificials. With the further assistance of Boga Medelea, and shade trees, and a little cattle manure to start the young plants, there are few places in North-East India where replanting is not eminently successful. Where the top soil has been lost in Ceylon, replanting often must mean an attempt to establish tea on physically unsuitable land, and therefore must entail much greater difficulty, and a longer time interval before good tea is re-established.

As Mr. Mayne reports for coffee, replanting of tea in North-East India is generally necessitated by deterioration of the bush and not by deterioration of the soil; but in some cases, replanting has as its object the replacement of old bushes still in good health, by a jat giving better quality under our conditions, together with a higher yield for the same expenditure. If the soil has deteriorated but bushes are still good, they can be brought to full yield by manuring.

Notes by Dr. C. R. Harler, Chief Scientific Officer, Kanan Devan Hills Produce Co., Ltd., on the above memorandum:—

I have read Mr. Cooper's observations with interest and record below some notes dealing with same.

Mr. Cooper labours under a double handicap in that he was not at the Meeting, neither has he any first-hand knowledge of planting conditions in South India. I will now touch upon some of the points he makes.

I do not remember whether I said 'plot' or 'plots' at the Meeting. I did not define 'shade', 'weeds' nor 'practical conditions', for time was not unlimited. I mentioned sufficient figures, taken from recent Tocklai publications, relating to returns from sulphate of ammonia on commercial estates to show that these fall far short of those registered at Tocklai. When I say that the right way to work our tea is to shade well, let soft weeds grow and disturb the soil as little as possible, this is not a confession of faith. It is a statement based, not on theories, but on careful study of tropical agriculture and observations in the field. When I state that in order to get spectacular yields from sulphate of ammonia the soil must be raped, I mean by 'spectacular' an increase of 7½ lb. tea per lb. nitrogen added.

The above points, as raised, are minor ones, not meriting serious discussion, but I will enlarge on some of Mr. Cooper's other statements.

I remarked that if in South India we reverted to jungle conditions we could make and maintain a crop of 600 lb. per acre without the use of fertilisers. Mr. Cooper says that few planters will be satisfied that such a very moderate crop is the most profitable. From recent figures, I have tabulated below the areas under tea, the year's production and the average crop per acre in Ceylon, South India and North-East India.

	Ceylon	*S. India*	*N.-E. India*
Tea area	559,236 acres	161,600 acres	652,400 acres
Production	232 million lb.	76 million lb.	353 million lb.
Average per acre	415 lb.	471 lb.	540 lb.

The Ceylon area includes 67.076 acres small holdings, and I have added 10 million lb. tea, account internal consumption, to the 222 million lb. exported from Ceylon in 1937-38. There is a fair acreage of small holdings in South India and, as in Ceylon, a certain area of non-yielding tea has been added to the official acreage since exports have been regulated. The South Indian crop is rapidly increasing and has risen from 59 to 76 million lb. since 1933, and should show still further rise in future. The climate of South India is not wholly favourable to tea, and is more difficult than that either in Ceylon or most of North-East India.

The area of tea with which I am personally concerned is about 35,000 acres, ranging from 3,000 to 7,000 feet, some immature, some in its prime and some beyond its prime, some planted on grassland, some on fine jungle soil and some on poor laterite. In part of the area the annual rainfall is about 250 inches, and in other parts about 50 inches only. Many fields give 1,000 lb.-odd per acre in some seasons, and one estate, high-grown, makes 850 lb. per acre. Nevertheless, if we can average year-in year-out 600 lb. per acre without fertilisers, and leave the soil for the next generation in as good a state as we found it, we are doing well and working profitably.

Mr. Cooper speaks of a yield of 1,534 lb. fine tea per acre at Borbhetta, but although the way to such a crop is indicated, the planter in North-East India obstinately plods on with an average of 540 lb. per acre of tea which is not always fine. In the Lakhimpur district of Assam, the country *par excellence* for tea, where production costs are high and manuring liberal, the average harvest is 726 lb. tea per acre.

Mr. Cooper states that at Rothampstead after about a century of artificials on continuous wheat, with stubble and weeds ploughed in, better crops are maintained than from the continuous use of cattle manure. We are to infer, presumably, that this gives us a line to go on with regard to the management of tea soils under tropical conditions. From May to October the mean monthly temperature at Rothampstead ranges from about 56° to 62°F. and the rainfall over the whole period is perhaps from 10 to 12 inches. At Tocklai the mean monthly temperature from May to October varies from 79° to 84°F. and the rainfall is about 65 inches.

Lime does well on roots at Rothampstead, but one should not on this account advocate lime for tea.

A recent publication from Tocklai is entitled 'War Time Manuring' dated December 15th 1939, and this was reproduced in the *Planters' Chronicle* of January 20th, 1940. I will deal with three points from this publication.

In the first paragraph it is stated that, for every million lb. extra crop needed in North-East India, 300 tons sulphate of ammonia are required. This assumes that 1 lb. nitrogen gives about 7¼ lb. tea extra.

Lower down it is stated that 'heavily shaded tea makes little or no use of nitrogenous manures, whilst moderately shaded tea gives much less response to added nitrogen than does unshaded tea'. Presumably if this happens in war-time it also holds in the piping times of peace. One wonders how many acres of shaded tea have, in the past, been dosed with sulphate of ammonia to give uneconomic returns for such, or no return at all.

Further on it is stated that 3 tons sun-dried Giant ageratum, grown outside the tea and then applied, give an effect equal to the 30 lb. nitrogen of 1½ cwt. calcium cyanamide.

It may be asked, what should be done if only very rough green stuff is available outside the tea. Then it no doubt pays to compost, and so, in the near future, we may expect a change in the Tocklai attitude towards composting.

Thus the change which will amount to a *volte face* is already on the way. Mr. Cooper observes that the object of Tocklai is research in the hope of discovery of new information . . . and its recommendations will be modified. Everyone, I am sure, appreciates this and expects modification. If, however, we use methods employed in commercial planting as our datum line for experiment, we shall make more progress than by starting from a datum line based on theory and on horticulture. Furthermore, conclusions reached by the former method may need modification or perhaps even change, but never a complete turnabout.

'INDIAN FARMING'

Indian Farming, the first number of which was issued in January 1940, is a monthly magazine intended to replace the old bimonthly 'Agriculture and Live-stock in India'. The aim of this new magazine is to present scientific information in a popular, easily assimilable form to the many people interested in the application of science to the day to day problems of Indian agriculture and animal husbandry. It will endeavour to give news of developments in research both at the Centre and in the Provinces and States, and in this way to present an all-India picture. It is issued by the Imperial Council of Agricultural Research, and the price is eight annas.

The first issue is a most successful production, and should appeal to all interested in agriculture. Topical articles include one on 'Agricultural Research in War-Time' by the Hon'ble Kunwar Sir Jagdish Prasad, Member for Education, Health and Lands in the Government of India, and 'The War and Fertilisers in India' by David Hendry, M.C., B.SC. There is included also a comprehensive article on 'Bee-keeping in India', Notes from the various Provinces, etc. The illustrations are excellently reproduced.

SOIL AND VEGETATION

A natural plant cover is in many ways an expression of the effective influences of site soil and climate. For this reason the inspection of vegetation has sometimes been regarded as a superior substitute for the study of soils, especially in reconnoitring the agricultural potentialities of undeveloped country. The underlying supposition is that all soil properties that are really significant in the given circumstances will receive expression through the plants, and that any remaining properties can be safely neglected. This supposition is, however, a valid one only in simple cases, which are rather rare; and as the basis of a practical or 'commonsense' method of assay it has repeatedly led to mistakes in land utilisation, particularly in the exploitation of tropical forests and of natural grasslands. If used uncritically it is liable to fail, firstly because botanical science is not yet equipped to apply it, and secondly because of an imperfect appreciation of the nature of the relationship between plants and soil.

To be fair to the botanists it should be said that soil scientists have still a great way to go to meet them in the neglected field, which is that of the classification of plants by their nutritional requirements and tolerances—one might say by their standards of living. The prospective user of land is not directly interested in the families, genera and species of the plants that are reported as growing in the soil in the natural state. He desires to hear, rather, whether these plants are such as have a reputation as luxurious feeders or on the contrary are known to be able to make do on little. He would like to be warned if they are plants with special requirements or able to stand this or that extreme soil condition. If the botanical information could be cast into this form it would enable at least an approximate idea of the soil's true character to be obtained before development began.

Some vegetation types as ordinarily described do of course convey this information partially. Swampiness and extreme droughtiness are usually sufficiently indicated. In better known floras which have been studied in conjunction with soil conditions a certain number of 'indicator plants' may be recognised as generally associated with particular soil characters, such as high acidity, liminess or salinity. Such plants are a small minority, however, especially in tropical floras, and the indications they can give in our present state of knowledge are extremely limited. Yet all plants must indicate something if they are in any way an 'expression' of soil conditions; and what most of them could tell about the soil is quite insufficiently known. In the animal world a prevalence of sparrows or elephants, tells of an abundance of the food they like and a rarity of conditions they cannot tolerate. In the world of higher plants, the corresponding inferences are presumably there to be drawn, but the necessary physiological knowledge, and knowledge of what are the significant soil factors (if any), is lacking for most wild species, even for the dominants and commonest associates of very widespread vegetation types.

That is one very serious weakness in the method of 'land reconnaissance through vegetation'. The other is due to the fact that however faithfully a natural vegetation may reflect the natural conditions that have promoted it, we frequently propose to change or entirely remove that vegetation for the purposes of our own use of the land, and we shall thereby change the conditions, perhaps fundamentally. A soil and its plant cover have identities that are not separable, but are interlocking. What have been regarded as forest soils, or prairie soils, or other soil types described in terms of their natural vegetation, cease to be such within a short period after the trees have been felled or the sod ploughed. From that point of sharp discontinuity the soils begin a new career in association with the new vegetation formed by the crop and its weeds—or without any such association in so far as the ground is kept clean tilled. The soil properties that were significant to the natural plant cover and received expression in it are not usually those that will be of most significance to the crop that has replaced it. The crop plants will have a more urgent seasonal demand for nutrients, yet may well be less efficient in stopping losses due to leaching and erosion. They may have a different range of tolerances. The success of a natural vegetation upon a given soil, even to the point of luxuriance, is not in itself evidence that the soil can successfully support man through the different kind of vegetation that he will establish.

To overlook these difficulties is like accepting a testimonial, written for a butcher, as recommendation for the post of baker or candlestick-maker. The error has, however, been common enough in the history of the development of virgin lands, and examples of very recent date were demonstrated to me in Trinidad and in British Guiana. Two of these involved the attempted conversion of forest lands to permanent agricultural use and one was an undertaking purely in forestry.

Some of the natural forests of Trinidad have timber that is of little value except for conversion into charcoal, for which there is a large local demand as fuel for domestic cooking. It has therefore been sought to replace such forest growth either by permanent peasant cultivations or by more valuable stands of timber to be planted after clear felling, the cost of clearing being covered in either case by the value of the charcoal.

The soil types concerned are sandy and the rainfall is high, but it was supposed that the luxuriance of the mixed forest, worthless though the forest was as timber, indicated that a high fertility had accumulated. On the tract cleared for permanent agricultural occupation, the results have, however, been very disappointing. After only a few years' cropping, the productivity of the soil has dropped until a subsistence is no longer afforded to the peasant cultivators. When I was shown the area, many of the holdings had already been abandoned. The settlers were of an industrious stock originally brought in as indentured labour from India, and neither lack of skill on their part, nor soil erosion in any form, could fairly be blamed; the original estimate of the soil's productive capacity under agricultural crops had been at fault, having been based on inference from the aspect of the vegetation. On the reafforestation project, also on a sandy soil but in a forest reserve, the cultivators had been brought in as temporary occupants only, as agents of cheap clearing who would pay themselves for their labour through the charcoal they made, plus one season's crops, in lieu of wages. After they had gone the Forest Department had experienced the greatest difficulty in establishing the desired stands of valuable trees (though these were of indigenous species) on the land that had been cleared and once cropped in this manner. In showing me over the ground the Conservator of Forests expressed the opinion very strongly that giving over the land to the cultivator for even one year had been an expensive mistake; the replanting operations had been handicapped thereby to the point of defeat. The only hope of replacing natural forest by commercial forest lay in preserving the continuity of true forest conditions through the transition as far as possible. The forest soil, in other words, ought to have been maintained as an entity, without changing it first into something else by alien processes of tillage and exposure.

Both these Trinidad soils had had a fertility quite sufficient to support a strong growth of natural mixed forest, or to grow satisfactory stands of commercial timbers instead, but they possessed this fertility only so long as the reaction of forest vegetation upon soil properties was maintained without interruption. It was not a fertility expressible through field crops, not persisting through an agricultural phase of utilisation to be manifested again through trees. The clearing, burning and tillage necessary for the planting of field crops had dismembered the soil as a working system, and the 'scrap' that was left did not provide the makings of an agricultural soil. Not even a good forest soil could be rebuilt from it, for there had been a loss of essential parts and the mechanisms of a year or two before could not be restored to working order.

The example I was shown in British Guiana repeated with even greater emphasis the same warning. Sandy country carrying rain forest had been crossed by a new road leading from Bartica (at the junction of the Essequibo and Mazaruni Rivers) to mining settlements in the far interior. Peasant smallholders were to be established in a string of clearings to be made along this road. After making a soil reconnaissance the agricultural chemist reported adversely on the prospects of any form of agricultural settlement on this land, and advised that the best use to which the soil could be put would be to continue to support its potentially valuable cover of *wallaba* timber (*Eperua falcata* Aubl.). This was in 1934. He was, however, overruled by Government and the clearings were made and the settlement scheme proceeded with; the forest itself was evidence of what the land could grow. When I was shown the area in April 1938, the cultivations were derelict and the settlers mostly gone. They had planted maize, cassava and pumpkins for from two to three years, and had thereafter been unable to make a living. On the abandoned clearings the only forest tree of value that showed signs of natural regeneration was the tonka-bean tree, *Dipteryx odorata* Willd., a single large specimen of which had been left standing and had shed seed. The prospects of re-establishing *wallaba* forest were, I was given to understand, small. In this case also, a lay estimate of fertility had been based on the stature and luxuriance of the virgin forest, and though the estimate was valid enough for that particular forest crop on its own unaltered soil, it proved to be at fault for the crops of cultivation.

The changes that soils may suffer by loss of a mutual relationship with a native vegetation are seen also in what may be called the 'exploitative' forms of utilisation of grasslands, or of grass-with-shrub lands such as the sage-brush types of the dry western United States. The overgrazing of pasturage, and the conversion of grassland to continuous arable use, have destructive effects which begin inconspicuously with the uppermost inch or two of the soil profile, but may continue with gathering impetus until the geography of a large tract of country has been altered. The report-reading public has already had examples in plenty described to it, e.g. in R. M. Gorrie's *The Use and Misuse of Land* (Oxford Forestry Memoirs, 19, 1935), and to most East African readers the subject will be familiar at first hand in some of its aspects. The main lesson to be learned from a study of such examples of soil destruction caused by excessive removal of herbage, I would summarise as follows:

One function of the higher plants in the maintenance of a soil is admittedly to provide residues, whose substance after incorporation will have manurial and other ameliorative effects. Good enough substitutes can, however, often be found for these dead residues, and it is a mistake to regard the provision of them as the whole duty of plant life to the soil. Higher plants do not grow merely in or on the soil, any more than microorganisms do. As participants in a working system they are *of* the soil, and if their living functions are checked or withheld for too long, as they are in circumstances of excessive grazing or too-prolonged continuance of arable cultivation, the soil reverts towards an inorganic condition in which, being 'dead', it is at the mercy of disintegrating forces.

If then the soil is to continue to grow plants for us, in turn we must grow plants for the soil.

There is of course nothing new in this principle, but its recognition in just these terms is, I think, recent. Thus in green manuring, the emphasis has usually been on the value of the *decomposing residues* of the green crop; any reconstructive activity of its root systems during life has been less considered. The same is true of standard doctrine about the rotation of crops: ' "Turnips, barley, clover, wheat"—each takes out what another has left, nitrogen is taken from the air and used, farmyard residues are fermented and returned to the land; full marks to the chemical processes, the microbes and the livestock, little credit to the growing plants. If any plant competes with your row of beans, he is a weed; "that's Roman wormwood—that's pigweed—that's sorrel—that's piper-grass—have at him, chop him up, turn his roots upward to the sun, don't let him have a fibre in the shade; if you do he'll turn himself t'other side up and be as green as a leek in two days"' (H.D. Thoreau; Walden, 1845.) Yet this is not the whole of the story, as the same American writer, hoeing his beans in New England nearly a century ago, knew well enough. 'We are wont to forgot that the sun looks on our cultivated fields, and on the prairies and forests without distinction. . . . In his view the earth is all equally cultivated like a garden. . . . Shall I not rejoice also at the abundance of the weeds?'

There is nowadays an increasing respect for live plants as accessories to soil management, on a valuation other than as harvestable crops or as residue-providers. They are achieving recognition in mechanical functions, as soil binders, water filterers, 'ten billion little dams'; in physical functions as structure formers and as regulators of eco-climate; in chemical functions as circulators of nutrients and as controllers of oxidation and reduction. The newer outlook is evident (to quote two non-American examples) in the strong advocacy of ley farming by Stapledon's school in England, and in the use of resting periods under elephant grass to relieve the pressure of cotton and grain crops on soils in Uganda. In the parts of the West Indies that I visited it appeared *inter alia* in the interest in forage grasses evident at the Imperial College farm in Trinidad, especially in Guatemala grass (*Tripsacum laxum*), Elephant grass (*Pennisetum purpureum*), Guinea grass (*Panicum màximum*), and Para grass (*Panicum barbinode*); and also in a very interesting trend away from the use of organic manures in the sugar-cane industry. Farm-yard manure (or 'pen-manure' as it is called in the West Indies) has long been the traditional soil ameliorant amongst sugar planters, and their scientific advisers' attitude towards it until recently is probably fairly represented by the following quotation from a 1924 paper by Professor F. Hardy:—

'There is no need to extol the many virtues of pen manure, or to reiterate the need of its greater employment in tropical agricultural practice. The main problem that confronts the planter in these days of mechanical tillage is how to manufacture larger quantities of pen manure with diminishing numbers of farm animals.'

This as a general statement would be warmly agreed to by most tropical agriculturists at the present day and is the basis of the increasing attention being paid almost everywhere to the making of compost. Yet it seems that on sugar-cane fields the 'organic matter problem' is now recognised as of subsidiary importance, or even as not arising. The value of pen manure has apparently been that of its contained nutrients and nothing more; the sugar-cane plant when grown to high yields with the aid of carefully adjusted dressings of artificials appears to maintain the organic matter status of its soils satisfactorily, and in virtue of its own root-growth performs all necessary services in soil-structure formation and the like. By the criterion of yield, organic manuring of sugar-cane is not necessary. This at least was the impression I gained in Barbados, in Trinidad and in British Guiana. If the view stands the test of time, it would seem that the cultivation of this particular crop plant, which is a perennial grass, automatically incorporates the advantages and safeguards of ley farming.

In the United States I saw much soil-management practice based on a constructive use of vegetation, both in the grazing States of the south-west and in the agricultural States of the south-east. In the former, more and more reliance is being placed on recuperation under protected natural or re-seeded pasture. In the latter, the proportion of clean-tilled crops is being reduced wherever possible, so that grass or fodder crops of equivalent habit may occupy the land undisturbed for some period of effective length interposed in the cropping cycle. These measures are of course a part of the general programme of soil conservation, but they are more than a means of stopping bodily losses of soil. They are measures consciously aimed at restoring living vegetation to the exercise of a neglected function in soil maintenance.—G. Milne, M.Sc., F.I.C., in *East African Agricultural Journal*, January, 1940.

CORRESPONDENCE

To

The Editor,
Planters' Chronicle.

Dear Sir,

SOUTHERN INDIA PLANTERS' 'BENEVOLENT' FUND

I think page 186 and para one of page 187 of the *Year Book of the Upasi* for 1939 deserves the attention of all Southern India Planters and Firms.

There, Mr. James hits the nail on the head and calls the Fund a 'Mutual Benefit Fund'—with the qualification 'if'.

There is no doubt that it is a Mutual Benefit Fund and not a Benevolent Fund as Benevolence is understood. Or does the question of Income Tax arise?

The Wynaads have been pegging away at this and Rule 8 for years but nothing has come of it.

It is reasonable to suppose that in many cases a Planter who applies for help will have gradually sunk into distress, so in these instances he will not have been able to afford to subscribe to the Fund during the year or two prior to his application. That being so, he would not be a member and would only be eligible for assistance under 2 (*b*) of the Memorandum.

Might I suggest to the Wynaad Planters and any other Planters who disapproved of the existing rules, that they give a donation each year, and ask that it be ear-marked for those Planters and their dependents in distress who are not members of the Fund. A real benevolent fund will then accumulate.

This will not entail 'membership' and they will not come under the rules. I am convinced that Planters do not subscribe to this Fund in the hope of getting something out of it themselves—or in other words, as a form of assurance.

Yours faithfully,
G. BAYZAND.

(The letter by Mr. Bayzand published above will be considered at the next meeting of the Committee of the Fund.—Ed.)

THE PIG INDUSTRY IN BRITISH MALAYA

The history of the pig industry in Malaya, until comparatively recent years, is somewhat obscure, but we may take it that with the populating of that country by many Chinese people, the pig also became rather an important inhabitant, and has been assiduously cared for ever since.

The Chinaman is credited, and justly so, with being one of the most industrious people, and although in Malaya his activities are extended over a wide area and in almost every sphere of life, his natural bent seems to be decidedly agricultural. Seldom will a Chinaman be more than a few days settled anywhere before pigs and poultry appear around his abode, and cultivation is commenced on whatever portion of land comes under his immediate care, whether this be acres or merely a few square yards.

Assured, we may be, that for many years all the pigs in Malaya, with the exception of the Malay wild pig, were Chinese bred and came entirely under the management of these diligent people. Pig meat being a favourite article of diet among the Chinese, many pigs are consumed.

Pigs and pig houses are kept scrupulously clean, washing of both taking place daily. In this way the prevention of disease is aided and bodily comfort assured.

The typical Chinese pig, black or piebald in colour, is a rather flat-footed, pot-bellied, hollow-backed animal, which possibly reached this condition through indiscriminate breeding and lack of minerals in the feeding. Probably the Chinaman's breeding technique is his stumbling block in an otherwise almost perfect system of management, for undoubtedly mineral requirements are given little or no consideration, thereby tending to produce rickety types. Rations are generally of a vegetable nature, all being grown by the feeder, and seldom is any addition of meaty or mineral matter made.

The majority of Chinese pigs are kept in sheds built cheaply but well of split nebong (a jungle palm). In some cases complete confinement is practised, with the exception, of course, of any young boars. At other times, and generally when well away from roads, cropping freedom is allowed during the day, and in this way a considerable proportion of food is picked up, especially in the vicinity of rubber trees. The seeds of the rubber tree are very rich in oil and are eaten with relish, making a useful fattening ration. It is also no uncommon sight to see herds of the Malay wild pig feeding in complete contentment among the rubber plantations.

A few rubber planters at various times introduced British boars and occasionally sows (which somehow ultimately became the property of the Chinese) but it was not until 1930 that the first definite step was taken in commercial pig breeding by British people. A planter and his assistant, both with Scottish farming experience, decided, with the support of their directors, to keep pigs on a large scale in conjunction with the ordinary estate work. At that time the rubber industry was in a serious position and the new project was commenced with considerable interest.

The manager of the estate, while home on leave, purchased a Large White boar from a well known East of Scotland pig breeder, and the boar, the first of that breed, duly arrived in Malaya. The Chinese showed great interest in this animal, and travelled many miles to see him. Unfortunately the boar died of snake bite shortly after his arrival, but his offspring served as an excellent foundation stock. For some time thereafter the boars used were a three-quarter bred Large White and a three-quarter bred Large Black. The Chinese sows bred well with these and were fairly prolific, the average litter being about twelve. Of these, ten usually reached weaning age, and from then on a few usually died off, generally from intestinal parasites, these being very troublesome in tropical climates. As in the Chinese method of management, the females were spayed.

The rations used on this estate were made up of rice bran coconut *poonac* (cake), a small proportion of *ikan busak* (fish refuse in a dry state), sweet potato leaves and stems, and banana tree trunks chopped up to a convenient size. Nursing sows received, in addition, some boiled broken rice, and the fattening ration was supplemented for the last few weeks with boiled tapioca roots but no rice. A home-made mineral mixture consisting of lime, charcoal, sulphur, wood ashes, and salt was added to all rations. A tropical grass, known as Guinea grass, was fed to all pigs confined to styes. This, and all other food of a vegetable nature was grown on the estate; other foods were bought in. To satisfy the local European demand for fresh pork, killing took place on the premises twice a week, and all surplus stock was sold to Chinese butchers.

From this, the first real commercial pig-keeping enterprise on a rubber estate, the following points were learned. It is best for the pigs to have free range, with a coolie herding them, until about four months old, when they soon fatten if confined to a sty. Killing should take place when they are about one hundred and fifty pounds live weight, and it was found that by breeding from the larger type of pig, such as the Large White, excessive fat at this weight is not obtained. Every endeavour should be made to get away from the Chinese type of sow, chiefly on account of the difficulty of serving with a large boar. Cleanliness of pigs and pig houses is most essential in an endeavour to avoid intestinal worms and other parasites. When importing pigs into the country, it is advisable that in-pig gilts or young sows should be taken in preference to boars, both as a matter of economy, and let the young pigs get acclimatised from birth.

The breeding and feeding of pigs on rubber estates is becoming more and more common, and with the ever increasing demand for better pigs in Malaya, there is every possibility that the demand for British breeds should increase fairly rapidly and in the not too distant future.—Ian P. Watson, N.D.A. in *The Planter.*

U. P. A. S. I. BUDGET MEETINGS

The following is the provisional programme for the U.P.A.S.I. Budget Meetings, 1940:—

Saturday	6th April 1940	9-00 a.m.	Labour Department General Meeting.
Do	do	2-30 p.m.	Tea Section Committee Meeting.
Sunday	7th April 1940	10-00 a.m.	Coffee Section Committee Meeting.
Do	do	2-30 p.m.	Rubber Section Committee Meeting (if necessary).
Monday	8th April 1940	9-00 a.m.	Executive Committee Meeting.
Do	do	3-00 p.m.	Tea Section General Meeting.
Tuesday	9th April 1940	9-00 a.m.	Coffee Section General Meeting.
Do	do	2-30 p.m.	U.P.A.S.I. General Meeting.

SIROCCO MACHINERY

We have received an interesting publication (Ref. SF. 315) from Messrs. Davidson & Co., Ltd., Manufacturers of the well-known Sirocco Tea Machinery. It gives full details of the Company's Recording Thermographs for Tea Drying Machines. The operation of Thermographs is described as follows:—

'The systems being filled with mercury, changes in the temperature of the bulbs give rise to corresponding changes of pressure in the systems, and consequently to slight movements in the Bourdon tubes in the instrument. These movements are magnified and recorded by the pens on the rotating circular chart.'

The use of Recording Thermographs enables a permanent record to be maintained of conditions inside the Drying Machines, and the value of such a record will be obvious to all planters; ready reference can be made, after reports have been received from brokers, to the conditions under which these teas were dried; a much closer check can be kept on the operatives engaged in the drying with less personal supervision on the part of the superintendent, etc.

We have received also a leaflet on Sirocco Endless Chain Pressure Tea Driers of which it is stated one or more is despatched to some tea estate every week.

TEA QUOTA PRICES

The Quota prices ruling in South India on 13th March were:—

Tea Export Quota ...	5 annas 6 pies per lb. (Nominal)
Internal Market Rights ...	1 pie per lb. (Nominal)

In Calcutta Export Quota was quoted at 5 annas 6 pies per lb.
Internal Consumption Quota remained unchanged at 2 pies per lb.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 3rd March 1940 were:—

Rubber, including export licences ...	53.00 cents a lb.
Rubber Export Quota	16.75 cents a lb.
1st quality Rubber alone	28.00 cents a lb.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

Income and Expenditure Account for the period 1st April 1939 to 31st December 1939.

EXPENDITURE	Rs.	A.	P.	Rs.	A.	P.
To Assistance Granted.—						
Case No.						
1. Allowance to widow ...	675	0	0			
2. Allowance to widow ...	150	0	0			
3. Allowance to widow ...	675	0	0			
4. Allowance to widow ...	450	0	0			
5. Destitute Planter ...	675	0	0			
6. Allowance to widow ...	450	0	0			
7. Education 1 girl, and allowance to Planter ...	400	0	0			
8. Allowance to widow ...	540	0	0			
9. Destitute Planter ...	225	0	0			
10. Destitute Planter ...	450	0	0			
11. Home education, one boy	335	15	1			
12. Home allowance to widow	906	12	5			
13. Home allowance to widow	523	15	0			
14. Allowance to widow ...	360	0	0			
15. Home education, one girl	409	13	2			
16. Home allowance to Destitute Planter ...	450	0	0			
17. Allowance to Destitute Planter ...	675	0	0			
18. Education, two children	250	0	0			
19. Allowance to widow ...	200	0	0			
20. Destitute Planter ...	50	0	0			
				8,851	7	8
Current Expenses				73	15	0
Excess of income over expenditure ...				2,313	7	7
				11,238	14	3

INCOME	Rs.	A.	P.	Rs.	A.	P.
By Subscriptions and Donations.—						
Anamallais ...	600	0	0			
Central Travancore ...	1,045	0	0			
Coorg ...	675	0	0			
Kanan Devans ...	140	0	0			
Mundakayam ...	275	0	0			
Mysore ...	475	0	0			
Nelliampathies ...	30	0	0			
Nilgiris ...	170	0	0			
Nilgiri-Wynaad ...	763	6	0			
South Travancore ...	75	0	0			
Wynaad ...	675	0	0			
Malabar ...	10	0	0			
Firms and Companies ...	50	0	0			
U.P.A.S.I. Staff ...	30	0	0			
Donations ...	2,863	4	3			
				7,876	10	3
Interest Received				3,109	12	3
Interest Accrued				252	7	9
				11,238	14	3

COONOOR,
31st January, 1940.

A. G. ACASTER,
Secretary.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sales Nos. 35 and 36 were held on 26th and 27th February, and 5th March 1940.

DESCRIPTION	Season 1939-40			Average on same date	
	Sale No 35	Sale No. 36	Average to date	In 1938	In 1937
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	10 6	...	11• 5	8 5	...
For Internal Consumption:—					
Leaf Teas ...	3 7	3 10	4 3	2 11	3 9
Dusts ...	4 7	4 5	4 5	3 5	4 1
Green Teas ...	5 2	5 6	5 10	4 4	...

RUBBER.—London Rubber on March 11, 1940, 12¼*d.*

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

SOUTH INDIAN TEA

	Sales on Feb. 27 & Mar. 5, 1940
Bengorm	1.05
Chamraj	1.09
Dunsandle	95
Glen Morgan	91
Kanniamallay	84
Letchmi	73/77
Malakiparai	76
Manalaroo	77
Nullatanni	83/86
Parkside	1.07
Pullivasal	80
Singara	1.14/1.09

SOUTH INDIAN TEA—*(contd.)*

	Sales on Feb. 27 & Mar. 5, 1940
Velonie	77
Vaghamon	70

RUBBER

	Sales on Feb. 29, 1940
Ribbed Smoked Sheet ...	53½
Contract Crepe ...	53½
Mottled Brown Latex Crepe	51½ to 52½
Brown Scrap Crepe ...	51 to 51½

The Madras Market

Current on 14th March, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

Following the announcement of the Budget and the report of the Select Committee on the Excess Profits Tax, markets staged a sharp recovery and during the early period under review, very substantial rises were seen in the leading industrial counters. At the close the market has reacted on profit-taking accentuated to some extent by the uncertainty in the political outlook both in India and Europe. The Government Security Market rules exceptionally firm following the announcement of the first large war loan which takes the form of an issue at par for £300 million earning interest at 3% repayable in 1955-59. Substantial gains of anything up to a rupee, have been seen even in terminable loans while 3½% rupee paper has touched as high as Rs. 94-8 as. The last two days, however, have seen a slightly easier tendency in sympathy with sterling.

Rubber.—Since our last report the price of raw rubber has sagged from 12⅜*d.* to 11¾*d.* The price of most rubber shares, however, has remained unchanged throughout the period under review. The price of raw rubber can still fall very appreciably before the majority of rubber shares would look over valued on an earning basis. Cochin Malabars were steady at Rs. 6-4 as., ex dividend. A very steady turnover has been possible in this scrip. Kalpettas were also better, being bid up to Rs. 16-12 as., while Velliamuttams changed hands at Rs. 16-4 as., cum the dividend of 5%. Malankaras were an easier counter with small parcels on offer at Rs. 37-8 as. Tropical Plantations were unchanged at Rs. 15-12 as. Among the lower priced shares, Thirumbadis were offered at Re. 1-11 as. with buyers holding out for Re. 1-9 as. Rajagiris were easier at Rs. 4-4 as., while Midlands sagged from Rs. 4-11 to Rs. 4-9 as. Ayer Manis ordys., on the other hand closed with buyers at Rs. 6-14 as.

Tea.—Rather more scrip has been available than for some months which probably accounts for the wider range of transactions. Vellamalais changed hands at between Rs. 10 and Rs. 10-4 as. Periakaramalais were on offer at Rs. 17-4 as., ex the second interim dividend of 5%, but failed to meet with support. Chembra Peaks at one time touched Rs. 2-15 as., closed with buyers over at Rs. 3-1 anna. Devasholas after being taken off the market at Rs. 7-6 as., closed with further sellers at Rs. 7-4 as. Kalasa teas were wanted at Rs. 4-14 as., while United Nilgiris changed hands at Rs. 112-8 as. Among planting debentures Ouchterloney Valley were taken off the market at Rs. 101 while there was a good demand for Vellamalais at Rs. 104 and Fringfords at Rs. 102-8 as.

FORTNIGHTLY RAINFALL STATEMENT

February 18, 1940 *to March* 2, 1940—(*Inclusive*)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty ...	0·53	...	124·36	124·89	25. Kotagiri ...	...	...	56·53	56·53
3. Kallar B'dge	...	0·41	162·43	162·84	26. Ootacamund...	...	...	55·71	55·71
4. Koney ...	...	...	123·70	123·70	27. Yercaud ...	...	...	72·00	72·00
8. Twyford ...	...	...	244·21	244·21	30. Devarshola T.E.S. ...	...	...	77·58	77·58
9. Pettimudi ...	0·02	...	329·23	329·25	31. CALICUT ...	...	...	115·29	115·29
10. Kalaar ...	...	...	236·59	236·59	32. Kuttiyadi ...	...	...	191·73	191·73
11. Chittavurrai...	...	...	41·46	41·46	33. Vayitri ...	...	...	151·16	151·16
12. BODI'KANUR...	...	...	20·17	20·17	34. Manantoddi...	...	...	83·97	83·97
13. COCHIN ...	...	...	131·21	131·21	35. Bilgiris ...	...	...	66·58	66·58
14. Mooply ...	...	...	130·62	130·62	38. Pollibetta ...	...	...	61·18	61·18
15. Pachaimallai	...	...	125·74	125·74	39. Coovercolly ...	N.R.	N.R.	74·22	...
16. Mudis ...	...	0·75	179·89	180·64	41. Kadamane ...	...	...	265·55	265·55
17. POLLACHI ...	...	...	33·06	33·06	43. Merthisub'gey	...	...	99·02	99·02
18. Ropeway Waterfall ...	N.R.	N.R.	97·16	...	45. Balehonnur...	...	...	88·62	88·62
21. Kerala Estate	N.R.	N.R.	148·85	...	46. MANGALORE...	...	...	116·41	116·41
22. Naduvattam	...	...	118·33	118·33	47. MADRAS ...	...	...	33·82	33·82
24. Coonoor ...	...	...	48·66	48·66					

N.R.=No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The Ross Institute of Tropical Hygiene has recently published a booklet entitled *Conservancy for Tea Estate Labourers in India;* it discusses methods of meeting some of the difficulties encountered in introducing the bored-hole type of latrine. It points out that the diseases that fall under the general heading of 'Infections of the Bowel' represent a group of great economic importance in India, the chief diseases being dysenteries and parasitic worm infections, cholera and the enteric group, etc. The proper disposal of night soil has always been realised to be a problem on estates, and the bored-hole latrine, which appears to have originated in the Dutch East Indies some twelve years ago, seems to provide a very acceptable answer to the problem. The essential features of a bored-hole latrine are a circular hole bored in the ground with an auger over which is placed a 'squatting plate' or pan enclosed in a superstructure. The advantages are the cheapness and ease with which it can be constructed in the majority of soils. The latrine falls into one of two classes, depending on whether or not it is bored to a depth below the subsoil water table. If it does not reach water level it serves as a deep dry earth privy and will gradually fill up. A hole of this nature of 16 inches in diameter, bored to a depth of 20 feet may be expected to last a family of five for about two to three years. If it is sunk below the water table then fermentation takes place and the faeces are digested as in a septic tank. If foreign bodies are not thrown down the hole such a latrine may last for many years. J. C. Carter (4) reports 'there are many latrines in Egypt that after eight years are only two-thirds full'.

The booklet in the first place discusses the ideal conditions for bored-hole latrine construction, and gives particulars as to the method of boring; it deals also with the special difficulties which may be encountered. Most members of the Association may be assumed to be familiar with these technical difficulties, and may find the most valuable part of the booklet is the way in which it deals with the difficulties in popularising this type of latrine with labourers. Three essentials are laid down. 'Firstly, the latrines must be properly constructed; secondly, they must be introduced to the labourers with a campaign of propaganda and education; and thirdly, one latrine must be supplied to each household.'

The appendix to the booklet gives some interesting replies to the questionnaire issued in Assam. Propaganda was conducted by various methods; personal talks by the Managers and Line Compounders proved useful in one case; on another estate the method was adopted of allotting these latrines in the first place to shopkeepers, Indian staff, etc. with the result that when the ordinary labourers saw their superiors use them they were eager to have them as a definite rise in status. All the replies stress the importance of having as far as possible a separate bored-hole latrine for each household. Finally the matter is summed up by the Manager of a Tea Estate in South Sylhet which has successfully introduced these latrines:—

'1. Propaganda is the finest agent to prepare the ground for a successful launching of the scheme. I personally talked on every possible occasion to my sirdars and chowkidars about the benefits accruing from the bored-hole latrine, stressing the fact that their wives and daughters would be spared the trouble and humility of having to use tea and jungle where privacy could never be guaranteed, quite apart from the danger of picking up hookworm, dysentery, etc. etc.

'2. There is no use whatsoever of putting down a few bored-hole latrines as a sort of try out on any estate. More harm is done by doing so than by any other circumstance. Careful enquiry on this point elicited the information that the favoured few were actually ridiculed out of using them by the majority who had not got them. My advice is to complete a whole estate at one time or leave the scheme alone.

'3. The building of a suitable house is most important. The majority of shelters over bored-hole I have seen have been of the "night watchman type" and quite unsuitable. I give a sketch of a very popular shelter at the end of these notes. I draw the reader's attention to the extended turza wall at the entrance and the fact that the door is full length at the opening. These two points are worth taking trouble over.

'4. The garden doctor and compounder should inspect regularly once a week to see no fouling is taking place and that the latrines are being used.

'5. Once a garden has been completed with bored-hole latrines there must be no one permitted to use tea or surrounding jungle by the management.'

TAILPIECE

The following is another of those stories which, if they are not true, certainly ought to be.

A Highland regiment was holding the line in a position where the trenches were knee-deep in mud, and the Colonel, out of regard for the men's comfort, thought that kilts might be replaced by trousers. He asked the sergeant-major, however, to find out what the men would think of such a departure from tradition, and that gentleman duly reported that only two were in favour of retention of the kilt.

'Oh,' said the Colonel, 'that's very satisfactory. But who are the two devoted Highlanders?'

'Private Ogg and Corporal Rubenstein, Sir.'

SOME FURTHER OBSERVATIONS ON COFFEE THRIPS

By F. B. Notley, M.Sc., A.I.C.T.A., F.R.E.S., Entomologist, Coffee Research Station, Lyamungu, Tanganyika Territory, in the 'East African Agricultural Journal'.

In a previous paper (1) the writer put forward the suggestion that thrips outbreaks in Kenya were induced by high average temperatures maintained over an unusually long period. Since that paper was written, some observations have been made in the coffee areas of the Northern Province of Tanganyika, chiefly at the Coffee Research Station, Lyamungu, which suggest that the conclusions arrived at apply also to this district, and to the species of thrips present there—*Physothrips xanthoceros* Hood.

During the hot weather at the end of 1936 and the beginning of 1937, a severe outbreak of thrips took place over the whole area. Serious damage was done at the Coffee Research Station, and spraying was carried out on some areas three times. Towards the end of the outbreak a series of counts of the number of thrips per leaf was undertaken on one of the badly affected areas. Meteorological observations are taken regularly at the station. These counts were not started until the beginning of April, so that they show the disappearance of the outbreak; they start with a slight rise to the maximum of nineteen per leaf, and then fall off rapidly. In the paper quoted above it was stated, 'There is thus a striking correlation between the intensity of the outbreak and maximum day temperatures . . .', and this correlation is still more striking when the actual numbers of thrips per leaf are recorded. There appears to be a very close correlation between the number of thrips per leaf and the average maximum day temperatures of about a fortnight previously.

FIG. 1

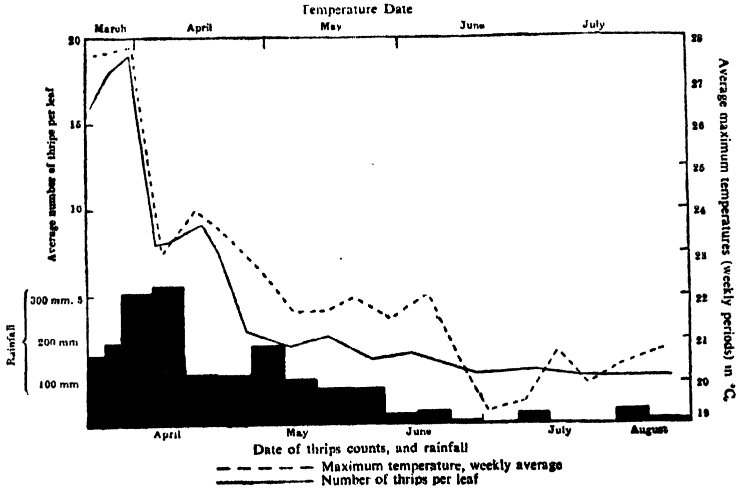


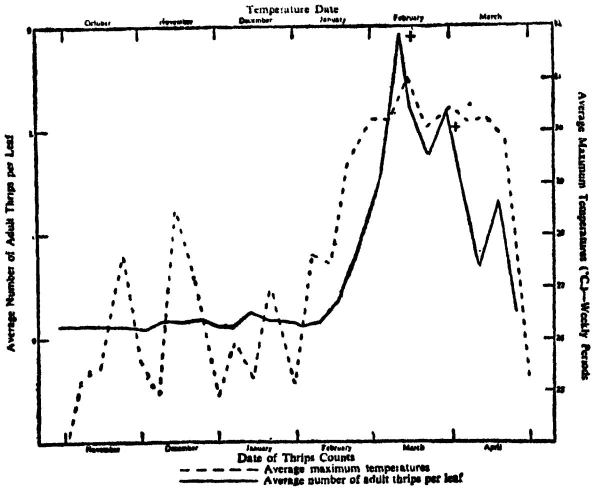
Fig. 1 is a diagram illustrating this. The continuous line represents the average number of thrips per leaf (all stages except eggs), while the dotted line represents the average maximum temperatures, taken at the end of weekly intervals, and shifted ten days later.

This drop in the numbers of thrips might however have been caused by rain; the breaking of the long rains coincided with the fall in temperature. On the same diagram is given the rainfall, in weekly totals, over the whole period. The first column, occupying half the space of that for the first week of April, represents the rainfall for the last week of March. It will be noted that although 162 mm. of rain fell on the last four days of March, and a further 54 mm. on the 1st April—a total of 8½ inches—the number of thrips actually increased between the 1st and the 10th of April. Again, thrips numbers rose slightly between the 17th and 27th April, although by the 17th April 739 mm. (over 29 inches) of rain had fallen in the previous 28 days. Thus rain does not appear to affect the numbers of thrips directly; nor does it seem likely that, as suggested by Ritchie (2), drought affects thrips indirectly by its concentrating effect on the sap of the tree. There can obviously have been no question of drought on the 17th of April, 1937.

Thrips could still be found in very small numbers in August, when the counts were discontinued.

An outbreak on the Station, and severe but local outbreaks elsewhere, again occurred in March, 1939. Counts, this time of adult thrips only, had been commenced in October, 1938. On this occasion the whole outbreak can be correlated with high temperatures, but since only adults were counted there is bound to be a bigger time lag before an increase is recorded, and the temperature date is shifted a whole month (Fig. 2).

FIG. 2



Throughout November, December and January thrips remained in very small numbers; the maximum temperature of October, November and December was rather low for the time of the year, round about 26 to 27°C. During January and the first week of February the maximum temperature rose to nearly 32°C., and during February the numbers of adult thrips similarly rose to an average of nearly three per leaf. (The maximum average number of all thrips, exclusive of eggs, during this outbreak was just over twelve per leaf.) Unfortunately for these records it was then necessary to spray the area twice. (The dates of spraying are shown by crosses on the diagram.) After the fall induced by the second spraying, however, a further rise took place until the effect of the fall in temperature a month previously was shown in a sudden drop in the thrips numbers in the latter half of April.

The period of this outbreak was one of increasing drought, the short rains having failed. But actual drought symptoms—wilting of the coffee at midday—appeared quite early in the season, considerably before the rise in thrips numbers took place.

The rate of increase of thrips, in these conditions, agrees fairly closely with the theoretical rate of increase of an insect doubling its numbers every seven days. This may be illustrated by a table, thus:

	Calculated No. of thrips per leaf	*Observed No. of thrips per leaf*
3rd February ...	0.10	0.12
10th February ...	0.20	0.13
17th February ...	0.40	0.26
24th February ...	0.80	0.86
3rd March ...	1.60	1.45
10th March ...	3.20	2.90

From a study of Figs. 1 and 2 it appears that, on the area where the counts were made, thrips increases in numbers when maximum screen temperatures exceed 27°C., and decreases at temperatures below this. But it must be remembered that this is not the whole story: these are temperatures in the meteorological screen while thrips lives on the underside of a coffee leaf in the field, not in the screen. Local factors will affect the temperature to which the insect is exposed very considerably. In the Northern Province of Tanganyika the local factors encouraging thrips appear to be exactly the same as those given in the previous paper (1) for the Central Province of Kenya, namely leeward (westerly) slopes, windbreaks, and poor soil, but to these should be added lack of shade. Shade trees in coffee are almost absent from thrips areas of the Central Province of Kenya, whereas unshaded coffee is the exception on Kilimanjaro. As would be expected, if maximum temperature is the critical factor, shaded coffee is very much less liable to suffer from thrips than unshaded. Sturdy (3) makes a point of this when discussing an experiment on artificial shade at Arusha in 1931.

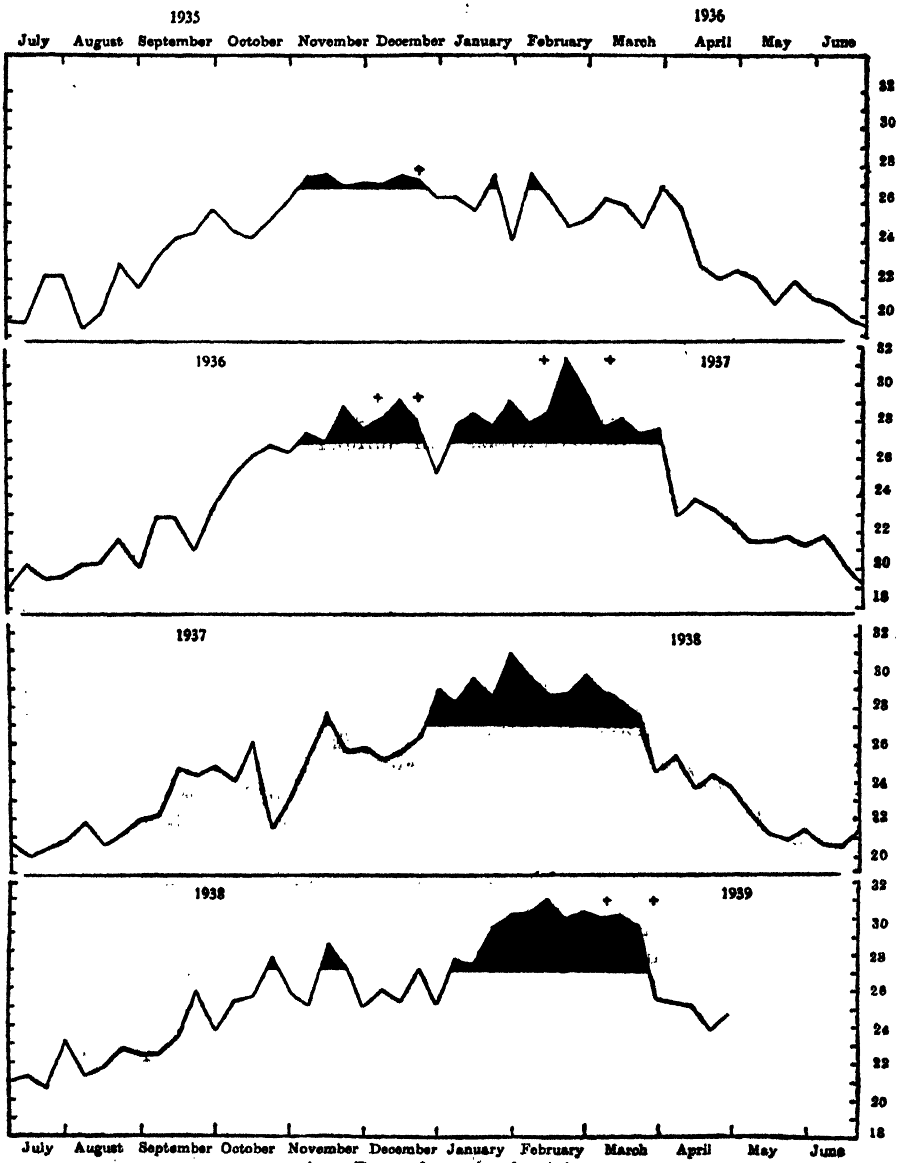
We can now discuss the incidence of thrips during the past four hot seasons in relation to maximum temperatures. Fig. 3 (on the next page) is a diagram of the maximum temperature, averaged over weekly periods, at the Coffee Research Station.

The diagrams are clearer if the year is divided at the end of June; thus the top diagram in Fig. 3 represents the average maximum temperatures from July, 1935, to June, 1936. In this way the thrips season, which may be regarded as the period from October to April, is presented as a whole. The word 'season' is used to imply this period throughout the paper. For ease in comparison, temperatures over 27°C. have been inked in, so that a glance at the diagram will show the length of time during which such temperatures were experienced, and the extent to which they were exceeded. Crosses on the diagram indicate the dates on which spraying against thrips was undertaken in the area under study.

In the 1935-36 season the short rains failed, and in December the coffee was very dry. Towards the end of December the area was sprayed as a precautionary measure. The temperatures of January, February and March were exceptionally low. No thrips outbreak took place.

In the 1936-37 season temperatures were high over an abnormally long period. The short rains were again very poor. Maximum screen temperatures were maintained almost continuously over 27°C. from the beginning of November until the beginning of April. A very serious outbreak took place both on Kilimanjaro and on Meru (Arusha). On the area under study, spraying was necessary four times; twice in December, in February and in March. (Actually the March spraying was not carried out; that it was necessary is shown by the fact that a thrips average of

FIG. 3



+ = Dates of spraying for thrips

Average Weekly Maximum Temperatures (°C.) at the Coffee Research Station, July, 1935, to April, 1939 nineteen per leaf was reached—see Fig. 1.) In Arusha the outbreak was described as the worst for many years.

In 1937-38 the short rains were good, and the temperatures in October, November and December low. During January, February and March the temperatures were normal for the time of year. Thrips failed to appear at all.

In 1938-39 the short rains were again very poor; the temperatures were fairly low until the end of December, but then rose fiercely, and a late thrips attack developed which was severe over limited areas both at Lyamungu and in the Usa district, but which did not develop into a widespread outbreak.

It will be noticed that during the 1937-38 and the 1938-39 season the maximum temperatures exceeded 27°C. for approximately the same length of time (during January, February and March), but in the first season no thrips appeared, while in the second thrips was locally severe. The discrepancy may be explained by comparing the actual temperatures during these two periods. In the first season these were round about 29°C., whereas in the second 30°C. was exceeded for seven successive weeks. The difference may appear to be small, but if it is assumed from the foregoing that 27°C. is the critical temperature, then in the first season this was exceeded by about two degrees, in the second by over three degrees. Thus in terms of effective degrees of temperature the 1938-39 season was more than fifty per cent more favourable to thrips than the 1937-38 season.

On the other hand, the theory put forward by Ritchie (2) that soil moisture is the determining factor is not excluded. In the 1937-38 season soil moistures were high, since the short rains were good, whereas in the 1938-39 season they were low. This theory is also supported by the observation that thrips damage is more serious on poor soil (i.e. soil lacking in moisture-retaining capacity) and the belief amongst planters that thrips attacks can be alleviated by irrigation. In neither of these cases has the observation been tested by counts of thrips numbers; they may mean either that a larger population of thrips is developed on a tree deficient in moisture, or that the same population of thrips does more visible damage in these circumstances. The trees well supplied with moisture may even induce, by evaporation or more efficient shading, a lower temperature in the ecoclimate affecting the thrips. The point will be investigated as opportunity offers. All these speculations, however, arise from the discussion of a theory which is not supported by any direct evidence, which does not cover all the known facts of thrips incidence, and is not necessary to explain the present case, since this may already be explained on temperature alone, as has been done in the preceding paragraph. So far, the evidence appears to point to temperature alone as the factor deciding thrips incidence.

The chief object of this work is to develop an accurate method of forecasting the probabilities of a general thrips outbreak, so that timely warning may be given and preparations made. It will be seen from Fig. 3 how quickly an outbreak may develop; the danger of being caught without the necessary insecticides, or with apparatus unready for work, is a very real one. There is, of course, no certainty about such forecasts; they depend on that most uncertain thing, the weather; but it is suggested that if maximum temperatures are watched from September onwards a useful forecast may be made by the middle of November. The underlying principle is that the critical temperature of 27°C. will be more and more likely to be exceeded as the season progresses, but that temperatures will be almost certain to fall at the end of March. Thus, the earlier temperatures of 26° or 27° are reached, the more likely is an outbreak of thrips. By the middle of November it should be possible to tell whether an early outbreak, and therefore probably a serious one, is to be expected; such a forecast should be modified as the season progresses. In this way it should be possible to forecast an outbreak three weeks to a month in advance with some degree of certainty. The first outbreaks will take place in definite localised spots; notably on unshaded coffee on western slopes or behind windbreaks. Such spots should be dealt with first. A very little observation by the planter during a thrips outbreak will show him exactly where his thrips outbreak centres are located, and it is possible that by early treatment of such areas he may reduce the general infection to which the rest of his coffee is exposed, and thus be able to delay or avoid larger operations over his whole area.

REFERENCES

(1) Notley, F. B.—*East African Agricultural Journal*, Vol. I, No. 4, Jan., 1936.

(2) Ritchie, A. H.—Department of Agriculture, Tanganyika Territory, Entomological Leaflet No. 2, 1930.

(3) Sturdy, D.—*East African Agricultural Journal*, Vol. I, No. 2, Sept., 1935.

Note on the above article. By Mr. W. W. Mayne, Coffee Scientific Officer, U.P.A.S.I.

Although thrips as a pest of coffee in S. India are almost unknown, only one case of attack having been reported to the Scientific Department since 1928, the article is of interest as showing the importance of meteorological records in understanding the reasons for pest attacks and in forecasting their occurrence.

It is possible that the severity of thrips outbreaks on cardamoms in recent years may be related to temperature conditions in a similar way. Any studies of thrips in cardamoms should include the establishment of meteorological records in close proximity to cardamom plants. It must be remembered that meteorological data collected in the ordinary way for the study of weather, while they may afford useful indications with respect to diseases and pests, are not sufficient for detailed studies of the interrelations of insects or fungi and climatic conditions. The climatic conditions within a coffee or cardamom estate under the usual shade densities differ very considerably from those in the open, and require special study. Several points in this connection are raised in the article—the influence of shade on temperature and the water supply of the tree in relation to evaporation and consequent cooling of the immediate environment of the thrips.

One interesting point in relation to cardamom thrips is the fact that the types with upright racemes seem to suffer more severely than those with creeping racemes. There is a possibility worth investigation that these differences may perhaps be due to slight but important differences in the immediate 'climatic' conditions affecting a raceme a foot or more above the soil surface and those affecting a raceme actually in contact with the soil.

In any crop where insect pests play an important part, the institution of temperature and humidity records, within the crop on estates might be expected to be of considerable assistance in planning control measures. This is especially the case where the pests are various kinds of sucking insects—scales, mosquito blight, thrips etc.—whose potentialities for damage depend on very rapid increases in numbers over relatively short periods.

LIVESTOCK ON ESTATES

The following particulars given by Mr. H. Walker, Manager, Kampar Estate, Perak, in the February 1940 issue of the *Malayan Agricultural Journal* regarding the method of control employed on his estate will interest those planters in South India who wish to encourage labour to keep livestock:—

It is a known fact that managers of estates refuse to allow their labourers to keep livestock owing to risk of damage to young rubber plants, either in new or replanted areas. This can be quite understood but I think the method of control employed on my estate can be claimed to have overcome the difficulty and I give details below.

GOATS

Before a labourer is allowed to bring goats into the estate, he must first obtain permission from the manager. The manager points out the difficulty of control and asks his labourers how many wish to keep goats if permission is given. If the number of goats is less than, say, 30, control is difficult, but a start can be made with this number. The procedure is that each would-be owner of goats must agree beforehand to pay so much per animal to a goatherd who will assume responsibility. With a small number it may be necessary to fix the rate at 20 cents per head a month and employ a boy or youth as herdsman. As the number increases—and increase it will—the boy can give place to a man and this is the state to be aimed at. As an example, my labourers started with about 30 goats and paid 20 cents a head; now there are 177 goats and owners pay 10 cents per month for a full-sized goat and 5 cents for a kid. It will be seen, therefore, that the herdsman gets quite a reasonable salary which will increase as the goats multiply. The introduction of the compulsory scheme of contribution from all owners of cattle to a herdsman is not resented in the least and gives the management more control.

The duties of the herdsman are to open up the pens in the morning, muster all the goats and drive them to the grazing ground. This place can be controlled by the management in such a way that the same area is not grazed over each day; in other words the estate can be split up into, say, seven areas so that the grass in each area has a chance to recover. He will stay with the herd all day and drive them home in the evening when the owners are present to pen them up for the night. The herdsman is also responsible for seeing that the animals do not stray into forbidden areas or on to adjoining properties.

A list of goat owners is kept showing the numbers of goats and is revised monthly. On pay day, each owner pays the amount due by him and this is collected by the management and handed over to the herdsman.

Housing.—Sites for the pens are chosen by the management in conjunction with the visiting doctor; they are in the vicinity of the lines but not near enough to be injurious to the health of the population. The pens are cheaply constructed and need not be elaborate. On most estates there is a jungle area where suitable timber is available and *ataps* can usually be obtained from old buildings which are being renovated. The practice is for several owners to join together and build a pen of suitable size for their stock. By so doing, the number of pens is minimised and the cost to the owners is their own labour plus a few nails and floor planks, the latter being moveable for easy cleaning and exposure to sunlight occasionally.

Meat.—So far there has been no sale of goats for slaughter in the market but usually a number of labourers join together and slaughter one or more and divide up the meat for their own consumption. By doing this they become self-supporting for meat which can be relied upon as being fresh.

Purchase.—Loans for the purpose of purchasing goats are obtained from the Estate Labourers' Co-operative Society; these loans are encouraged by the Society officers and usually approved by the manager. The committee of the Society is responsible for seeing that the loans are used for the purpose granted and report accordingly to the management.

COWS

The same procedure as for goats is adopted in respect of cows, but the cost per head payable to the herdsman is higher. At the moment my labourers have 22 cows, and the owners pay 50 cents per head per month. This is not unreasonable, as I am given to understand that a healthy cow will give an average of 75 bottles of milk monthly. This is readily sold at 10 cents per bottle or a return of $7.50 gross per month to the owner, not to mention periodic increases in his stock.

DISEASE

Over the last 3 or 4 years there has been practically no disease amongst livestock on this estate. Veterinary officers gladly visit estates upon request and advise treatment for any disease together with advice as to breeding and general husbandry.

GENERAL

In conclusion, it may be said by many managers that all this causes extra work. Perhaps it does a little but four points should be borne in mind:—

(i) Livestock represents labourers' savings, and possession makes them happier and more contented as they are accustomed to keeping livestock in India.

(ii) Livestock provides a supply of fresh milk which is so desirable for children and mothers.

(iii) Livestock provides a ready supply of fresh meat, saves the cost of purchase in the open market and helps to balance the rations of the labour force.

(iv) Livestock provides quite an appreciable amount of manure which, returned to the labourers' allotments, improves growth of vegetables and other foodstuffs. This encourages the growing of more foodstuffs which is in itself a very important point.

Statistics show that at least 35 per cent. of the goats slaughtered in Malaya are imported, and a little encouragement to those who wish to keep animals on estates would help to reduce this import. Thus more money would be retained in the country and the spending power of those who breed livestock in their spare time increased. This is particularly important during the present national emergency and I hope that my article may assist in winning this economic war.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 17th March were:—

Rubber, including export licences	...	53.00 cents a lb.
Rubber Export Quota	...	18.00 cents a lb.
1st quality R.S.S. Rubber	...	35.00 cents a lb.

WAGES AND PRICES

The following extracts from a recent editorial of the *Economist*, London, dealing with the outline of a wage policy in relation to the rise in the cost of living due to war, may be found of interest:—

'The arguments which have been advanced since the beginning of the war for the establishment of a check on the upward movement of wages and prices have been confused and disjointed, often irrelevant, generally irresponsible, and finally inconclusive. The Prime Minister has said that "it would be a mistake to tie up wages with the cost of living"; the trade unions are taking what they can get, while not denying that the cumulative result of their action may be financial disaster; their leaders are "conducting an enquiry" into wages and prices whose interim results contribute more to recrimination than to policy; and the general public, having sufficiently acquainted itself with the intricacies of the connection between wages and prices to be able to lisp the blessed words "vicious spiral", waits uncertainly for somebody to straighten it out. If the question is allowed to recede into the background now, it will undoubtedly reassert itself later in a much less manageable form. It is therefore necessary to discover at once a means to break through the existing confusion of opinion and to present a clear issue of policy.

The first principle of wage policy in wartime, says the *Economist*, must inevitably be that enunciated by the Prime Minister. Any attempt to raise all wage-rates in proportion to the rise in the cost of living must be self-defeating. But there should be a second principle also: no one whose wages provide no margin over the cost of minimum subsistence must be pushed below that level by the rise in prices. These should be the limiting factors: on the one hand, no general adjustment to the cost of living; on the other hand, no refusal to help those already on the poverty line.

'These limiting principles leave room for substantial variations of policy in practice, and no central policy will avail to prevent those who are in a strong bargaining position from pursuing their advantage. But one or two practical suggestions have emerged from the current discussions. One that is of particular importance in the main strategy of the price probelm is that wage increases should not come into play until the cost of living has risen above its minimum by more than a certain minimum number of points. Much of the greater part of the rise in the cost of living in the first four months of war was due to the non-recurrent effects of the change from peace to war. If this rise is faithfully followed by wages, then the vicious spiral will be inevitable; if it is largely ignored, the vicious spiral will never begin. The official figure stood at 155 (1914=100) on 1st August, and at 173 on 1st December. For the purposes of wage negotiations the datum line might be taken at 165, and only rises above this point should be taken into account. The equity of this proposal lies in the fact that the British wage-earner has enjoyed an enormous uncovenanted benefit, in the past decade, from the fall in the cost of living; its expediency lies in the hope it would hold out of avoiding the start of a continuous rise.

'Beyond this point, the problem is to protect those whose incomes are nearest the minimum without attempting to maintain the consumption of those who have a margin to spare. This would suggest that the proper method of making allowance for the rise in the cost of living would not be to alter the basic rates of wages, but to give every employee a flat-rate cash bonus, whose amount would be the same whatever the rate of wages.

This bonus should be calculated to offset the rise in the cost of living on a minimum subsistence wage. Thus if the rise in the cost of living above the datum line were 10 per cent. and the minimum subsistence wage in August last were adjudged to have been 40*s*. then the flat rate bonus should, on this calculation, be 4*s*.

'The difficulty about this neat and tidy scheme, however, is obviously that there is no such thing as a minimum subsistence wage irrespective of the family responsibilities of the wage-earner. This touches the heart of the problem. It is impossible to isolate any particular class of wages as being on the subsistence line. Any attempt to adjust wages to the cost of living by dealing equally with all employees will run into one of two alternative difficulties: either the large family will be pushed below the starvation level or the small family will be given a present of increased consuming power. Actually, in conditions of war economy, the former is certain to happen unless family circumstances are taken into account.

'Any attempt to follow logic to its conclusion and change the whole structure of wages to a family allowance basis would be wrecked both by administrative difficulties and the hostility of the trade unions. But perhaps the same principle could be applied, not to the basic wage, but to the cost-of-living bonus addition, in such a way that the large family received a larger bonus than the small. Even this modest proposal will not be welcome to the unions, but the case for it is so clear and the alternative so distressing that the unions can fairly be asked to content themselves with the fact that the basic wage rates would be left uncontaminated by any reference to the needs of those who receive them.'

SOUTH INDIAN TEA RE-EXPORTED FROM CEYLON

During the month of February 1940

Destination	*Lbs.*
United States of America	420,382
Continent	7,050
Australia	221,824
Iraq	2,740
Other countries	82,099
Canada	189,844
Total	923,939

TEA QUOTA PRICES

In South India the season may be considered as closed. The following are the approximate prices quoted at the commencement of the New Season:—

Tea Export Quota	5 annas 10 pies per lb.
Internal Market Rights	1 pie per lb.

DISTRICT NOTES

CENTRAL TRAVANCORE

Minutes of an Extraordinary General Meeting (being the third quarterly General Meeting in 1939-40) of the Central Travancore Planters' Association held on Tuesday, 27th February 1940, at 10 a.m. at the Vandiperiyar Club

Present:

Messrs. W. F. Inman (*Chairman*), J. M. Wilkie, A. R. St. George, H. Clarke, W. S. Rowson, M. S. Calderwood, A. B. Gordon Graham, A. K. O. Fullbrook Leggatt, H. Gibbon, F. Bissett, C. J. Madden, J. S. Wilkie, G. Newton, R. F. Vinen, M. R. Coghlan, M. W. Hoare, W. F. Anderson (*Honorary Secretary*).

Visitor.—Mr. A. H. J. How.

The Honorary Secretary read the notice calling the meeting.

Minutes.—The Minutes of the second quarterly general meeting held on the 21st October 1939 which had been published in the *Planters' Chronicle* of the 11th November 1939 were taken as a correct record and signed.

Correspondence.—

1. Read and recorded letter from the Ross Institute of Tropical Hygiene re. Association's continued support.

2. Read and recorded letter from Financial Secretary to the Association of Planters of Travancore regarding recognised banks in Travancore.

Indian Tea Market Expansion Board.—Read and recorded letter dated 30th January 1940 from Mr. J. W. Tolson to Mr. Milner.

S.I.P.B. Fund.—The meeting was informed of the present year's contributions to the Fund.

Cardamom Research.—Letters from the U.P.A.S.I. and Travancore District Association were duly considered and the meeting approved of Mr. M. R. Coghlan being nominated to the *ad hoc* Sub Committee in view of Mr. K. L. Kershaw having been called up for military service.

Memorandum and Articles of Association.—The meeting was informed that the draft Memorandum and Articles have been submitted to Government for the necessary approval.

Travancore Factories Act Rules.—In view of the impossibility of obtaining copies of the final Rules, the Honorary Secretary was instructed to obtain sufficient copies of the Government Gazette dated 30th January 1940 for all estates.

District Rates.—

1. The following resolution proposed by Mr. J. S. Wilkie and seconded by Mr. M. R. Coghlan was put to the meeting and carried:—

'That as Rule No. 1 of the District Rates dated 1st February 1938 appears to be open to more than one interpretation, an explanation termed 1 (a) be added as follows:—

Advances shall mean recruiting advances made by the estate or by the Kangany with estate monies or with the Kangany's own money. The Rule shall apply to advance account so limiting the amount acceptable to a maximum average of Rs. 5 per head in any one year.'

2. The following resolution proposed from the Chair was put to the meeting and carried:—

'That Rule 3 of the C.T.P.A. District Rates should be deleted.'

War Fund.—This matter was discussed at length and it was proposed from the Chair that:—

'Messrs. A. R. St. George, H. Gibbon and M. S. Calderwood be asked to form a Sub Committee to organise war charities in the district.' *Carried.*

Any other business.—Read and recorded Government Notice to the effect that from 1st April 1940, the Tahsildar, Peermade, will be empowered to issue short term licenses under the Madras Motor Vehicles Taxation Act.

With a vote of thanks to the Chairman and to the members of the Vandiperiyar Club for the use of the premises the meeting was declared closed.

W. F. INMAN,
Chairman.

W. F. ANDERSON,
Honorary Secretary.

NILGIRI-WYNAAD

Minutes of an Extraordinary General Meeting of the Nilgiri-Wynaad Planters' Association held at Mango Range Club on Wednesday, 21st February 1940, at 2-15 p.m.

Present:

Messrs. A. N. Scott Hart (*Chairman*), R. N. W. Jodrell, T. Ryan, W. L. Roberts, W. R. Grove, J. C. Nicolls, W. S. Heron, A. Foote and N. Johnston (*Honorary Secretary*).

It was proposed from the Chair that the resolution passed at the Annual General Meeting of the Association held at Gudalur on Tuesday, 2nd May 1939 at 3-15 p.m. reading as follows:—

'That in future a member of the Association be asked to audit the accounts and so save the Chartered Accountant's fee.'

be rescinded, and that the following resolution which is a special resolution, be substituted:—

'That Mr. K. V. Gopala Iyer be appointed auditor of the N.W.P.A. for the current year at a remuneration of Rs. 35 and to hold office until the next Annual General Meeting.' *Carried unanimously.*

Minutes of an Extraordinary General Meeting of the Nilgiri-Wynaad Planters' Association held at Mango Range Club on Wednesday, 21st February 1940, at 2-30 p.m.

Present:

Messrs. A. N. Scott Hart (*Chairman*), R. N. W. Jodrell, T. Ryan, W. L. Roberts, W. R. Grove, J. C. Nicolls, W. S. Heron, A. Foote and N. Johnston (*Honorary Secretary*).

The Honorary Secretary read the notice calling the meeting.

It was proposed from the Chair that the 'revised Articles of Association as published, be accepted by the Association.' *Carried unanimously.*

Minutes of an Extraordinary General Meeting of the Nilgiri-Wynaad Planters' Association held at Mango Range Club on Wednesday, 21st February 1940, at 2-45 p.m.

Present:

Messrs. A. N. Scott Hart (*Chairman*), R. N. W. Jodrell, T. Ryan, W. L. Roberts, W. R. Grove, J. C. Nicolls, W. S. Heron, A. Foote and N. Johnston (*Honorary Secretary*).

The Honorary Secretary read the notice calling the meeting.

The Minutes of the last meeting having been published in the *Planters' Chronicle*, were confirmed.

S.I.P.B. Fund.—The Honorary Secretary gave approximate figure of the amount collected to date, and appreciation was expressed that the sum collected so far is above the average of recent years.

He was instructed to send out final reminders to those few members who have not yet subscribed to the Fund.

An application for assistance was considered and the Honorary Secretary was instructed to call for further information.

Correspondence and any other competent business.—District Roads were discussed, and it was decided to request Government to take over the repair and maintenance of the whole of the Calicut-Ootacamund Road.

The delegate to the U.P.A.S.I. Annual General Meeting reported on the matters on which he had been instructed to obtain information.

There being no further business, the meeting closed with a vote of thanks to the Chair and to the Mango Range Club for the use of the room.

A. N. SCOTT HART,
Chairman.

N. JOHNSTON,
Honorary Secretary.

WYNAAD

Minutes of an Extraordinary General Meeting held at the Meppadi Club on Wednesday, 13th March 1940, at 3 p.m.

Present:

Messrs. J. A. Gwynne (*Chairman*), D. Bate, B. D. Darkin, C. E. A. Ewart, I. W. Finlayson, F. H. Farmer, H. S. Lake, P. A. Naylor, E. R. Peachey and B. St. J. Boultbee (*Honorary Secretary*).

Notice calling the meeting having been circulated was taken as read.

The Minutes of last meeting were taken as read and confirmed.

The following resolutions were proposed from the Chair:—

(*a*) 'That the Wynaad Planters' Association be wound up voluntarily and that Mr. B. St. J. Boultbee of Sentinel Rock Estate, be appointed liquidator for the purpose of such voluntary winding up.' *Carried unanimously.*

(*b*) 'That in accordance with paragraph 3 of the Memorandum of Association, any property remaining after the satisfaction of all the debts and liabilities of the Association shall be transferred to the unregistered Association known as the Wynaad Planters' Association, the same being an institution having objects similar to the objects of this Association.' *Carried unanimously.*

Labour conditions in Wynaad and Nilgiris.—Full correspondence was read and it was decided to refer the matter to the Labour Committee of the Association for their recommendations and the Honorary Secretary was instructed to write to all estates asking for details regarding housing, provision of cumblies and maternity benefits.

Ross Institute Malarial Survey.—The Honorary Secretary informed the meeting of the proposed budget for 1940-41. It was decided to send copies of the draft budget to the Ross Institute Malarial Survey—Wynaad Committee for their comments.

S.I.P.B. Fund.—Mr. G. Bayzand's letter of 7th February 1940 to the Editor, *Planters' Chronicle*, was read. After some discussion Mr. B. St. J. Boultbee proposed and Mr. P. A. Naylor seconded 'that the Committee of the Association draft such alterations to the S.I.P.B. Fund Rules as they consider desirable to enable the matter to be fully discussed at a general meeting'.

Roads.—

Calicut-Ootacamund.—Letter from the Nilgiri-Wynaad Planters' Association regarding the question of the P.W.D. taking over the District Board section of the above road.

The meeting was in full agreement and decided to give the Nilgiri-Wynaad Association the fullest support, if they put up a resolution at the Annual Meeting of the U.P.A.S.I.

Vayittiri-Manantoddy Road.—Resolved 'that the District Board be requested to have all bridges and culverts on Road No. 64 between miles 1 to 8 on Vayittiri-Tariote section examined for the purpose of rebuilding, repairing and necessary maintenance of the same.' *Carried unanimously.*

Bills.—Sanction for the payments of the Auditor's bill for Rs. 35 and the Meppadi Club bill for Rs. 18 for refreshment charges on Sir Malcolm Watson's visit were passed.

U.P.A.S.I. Head Office Budget Meeting.—Proposed from the Chair 'that Mr. P. A. Naylor acts as this Association's representative at the budget meeting of the U.P.A.S.I. to be held at Coonoor in April 1940'.

Correspondence.—The following letters were read:—

Letter from the Editor, *Planters' Chronicle*, dated 29th January 1940 regarding the bound volume of *Planters' Chronicle* 1939.

Letter from the Engineer, Pykara Electric System, dated 10th February 1940 to the Secretary, U.P.A.S.I.

Letter from the Secretary, U.P.A.S.I., dated 6th March 1940 regarding the cultivation of Pyrethrum.

There being no other business to transact, the meeting closed with a vote of thanks to the Chair.

J. A. GWYNNE,
Chairman.

B. ST. J. BOULTBEE,
Honorary Secretary.

CORRESPONDENCE

To

The Editor,
Planters' Chronicle.

Dear Sir,

I would draw your attention to page 89 of the *Planters' Chronicle* dated 17th February 1940, the paragraph under the heading of 'Fine "Napier" Grass of Mysore'.

My father (A. W. John) planted this grass (*Pennisctum Purpureum*) on Chittavurrai Estate (High Range) in 1936 obtaining the seed from Ceylon. It was spread from there to a number of estates in the following years and now quite a large quantity of this grass is to be found up here.

It has been found very useful planted in swamps and ravines to make the necessary shade for drains in malarious areas.

It would therefore appear that the claim made by the Mysore Information Bureau is unfounded.

Yours faithfully,
C. H. JOHN,
Manager.

Periakanal Estate,
Surianalle P.O.,
High Range,
Travancore, S. India.
7th March 1940.

To
The Editor,
Planters' Chronicle.

Dear Sir,

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

I have read Mr. Bayzand's letter published in the *Planters' Chronicle* of 16th instant with interest.

I believe however that the formation of two funds such as he suggests, one for 'members' and another a 'real benevolent fund' for those who are not members of the Fund would create most serious difficulties of administration and would also be quite unnecessary.

In certain quarters two fears appear to be held regarding this Fund. These are I believe groundless, but as they undoubtedly do exist they should be examined.

They relate to Rule 8 which deals with cessation of membership, and to Section 2 of the Memorandum.

It is difficult to see how Rule 8 can be altered, and I have yet to meet a subscriber who regarded his subscription as a form of Insurance, and not as a donation to a Benevolent Fund. The retention of a list of members, and of Rules regarding arrears of subscriptions, are both essential to ensure a regular source of income from subscriptions to the Fund, but the list of members is not kept simply to provide a list of future beneficiaries. If the idea of a definite subscription, due on a certain date each year were dropped, there is little doubt that the collection of these would fall into a chaotic condition.

There remains the question of those members who for various reasons allow their subscription to lapse, and later wish to join the Association again.

As the Fund Committee accept the recommendation of D.A. Committees in this matter, no one can be unfairly barred from rejoining. There are often adequate reasons why subscriptions have been allowed to lapse, and even where this has only occurred through carelessness, the D.A. Committee can still make such recommendations under 8 (c) as will ensure that the individual concerned again becomes a member.

If this principle of membership is accepted, I believe it disposes of Mr. Bayzand's fears regarding Section No. 2 (b) of the Memorandum which refers to the granting of assistance to non-members, for I do not think he can quote any case of a non-member's application having been hardly dealt with; it is the fear that it might be, which has urged him to write his letter.

The only justification in the Rules for that fear, appears to be that at present a non-member's application requires the unanimous support of the D.P.A., which means that one stubborn member can block an application. It would seem doubtful if this unanimous support is necessary. In 99 cases out of a 100, a deserving application would be pretty sure to receive it, but the hundredth case might be unfortunate and fail to pass the District Committee owing to one biased adverse vote, and the Fund Committee would therefore be unable to consider the case. It is possible that the omission of the word 'unanimous' in Rule 22 would help to meet the wishes of those who seek to ensure that the spirit of benevolence is the continuing guiding spirit behind the Fund.

All funds have to work inside certain rules, and as long as those rules in theory permit of fair working, and in practice result in fair working, it would seem unnecessary to make major alterations in them.

Pollibetta, Coorg, S. India, Yours faithfully,
22nd March 1940. IVOR BULL.

GIFT OF INDIAN COFFEE TO THE CANADIAN TROOPS IN FRANCE

The Secretary, Indian Coffee Cess Committee, Bangalore, gratefully acknowledges the following gifts of coffee, and cash donations, in lieu of coffee, received by him up to the 9th of March 1940, for the purpose of making the gift of a suitable quantity and quality of Indian coffee to the Canadian Troops in France:—

A. GIFTS OF COFFEE

3 cwt. from Moodsoosie Estate	3 cwt.
2½ cwt. each from (1) Messrs. T. Stanes & Co., Ltd., and (2) The United Coffee Supply Co., Ltd.	5 cwt.
2 cwt. each from (1) Arabidacool (cash realised Rs. 92), and (2) Balur Estates	4 cwt.
1 bag each from (1) Hanumanhully, (2) Honnametti, (3) Attikan, (4) Gorrayhatti, (5) Kartikerri, (6) Bedaguli, (7) Kulhutty, (8) Elk Hill, (9) Kutchen Huckloo and (10) Kunnergode Estates	16¼ cwt.
1 cwt. each from (1) Mr. S. H. Dennis, (2) Mr. C. K. Pittock, (3) Mr. V. L. Travers-Drapes, (4) Coorg & Mysore Coffee Co. (1937), Ltd. (cash realised Rs. 38), and (5) Coovercolly Group, (6) Santagherry, (7) Utollalu, (8) Injipara, (9) Karadykhan, (10) Kolarkhan, (11) Gungegiri, (12) Kondadkhan, (13) Howinhuckloo, (14) Kerehuckloo, (15) Santaveri, (16) Siddakhan, (17) Moganaad Peak, (18) Cauvery Peak, (19) Valalakadai Peak, (20) Puthutotam, (21) Valparai, (22) Kurkenmutty, (23) Mertikhan, (24) Honeyvale, (25) Poothundu, and (26) Rockwood Estates	26 cwt.
½ cwt. each from (1) Merthicowanhalla (cash realised Rs. 20), (2) Udevar, and (3) Korangumudi Estates	1½ cwt.
	55¾ cwt.

B. CASH DONATIONS, IN LIEU OF COFFEE

Rs. 50 each from (1) Mr. L. P. Kent, (2) Mr. H. S. Northey, (3) Mysore Planters' Association (Inc.), and (4) Jumboor, (5) Anoor and (6) Vaniah Estates	Rs. 300
Rs. 31 from Goorghully and Hosshully Estates	Rs. 31
Rs. 25 each from (1) Mr. E. N. Whittaker, (2) Mr. A. L. Hill, (3) Mr. E. R. W. Walker, (4) Dharmapravartha M. L. Nagappa Setty, (5) Mr. J. H. Jeffrey, (6) Mr. M. J. Simon, and (7) Horoor, (8) Karrie Kollie, (9) Kil Kotagiri, (10) Cotacadoo, (11) Attur and (12) Wooligooly Estates	Rs. 300
Rs. 20 from Mr. Ivor Bull	Rs. 20
Rs. 15 from Sandalwood Estate	Rs. 15
Rs. 10 each from (1) Mrs. E. N. Whittaker, (2) Mr. A. C. Thimiah and (3) Emerald Valley and (4) Carolina Estates ...	Rs. 40
Rs. 5 each from (1) Major D. N. Pitcairn, (2) Mr. M. P. Appayya and (3) I.C.C.C. Staff at Headquarters	Rs. 15
	Rs. 721

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sale No. 37 was held on 12th March, 1940.

DESCRIPTION	Season 1939-40		Average on same date	
	Sale No. 37	Average to date	In 1938	In 1937
	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	...	11 5	9 7	...
For Internal Consumption:—				
Leaf Teas ...	3 6	4 3	3 3	3 9
Dusts ...	3 11	4 5	2 11	4 1
Green Teas ...	5 5	5 10	4 4	...

RUBBER.—London Rubber on March 26, 1940, 11 3/16*d.*

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sale on Mar. 12, 1940
Chamraj	1.10
Kil Kotagiri	1.10
Mount Stuart	.80
Singara	1.00

Rubber

	Sale on Mar. 7, 1940
Ribbed Smoked Sheet ...	55
Contract Crepe ...	55
Mottled Brown Latex Crepe	52½ to 53½
Brown Scrap Crepe ...	52½ to 53½

The Madras Market

Current on 28th March, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

Since our last report a fortnight ago the market has been closed for the better part of the week on account of the Easter Holidays. On the reopening on Tuesday 26th instant, it was evident that the accumulation of orders on broker's books was limited. The undertone however has continued very steady. The small volume of inquiries has not been sufficient to influence prices either way. The Government Security Market continues very firm while during the past few days further gains have been seen in the leading speculative stocks. Indian Irons, advancing to Rs. 36-12 as., and Tata Ordinaries to Rs. 390. The feature of the past week has been the keen demand for good class preference shares and debentures, which demand is still unsatisfied.

Rubber.—The price of rubber has ruled steady at around 11¼*d.*, the local price being approximately 35 cents for uncouponed Rubber and 25 cents for the coupon. Cochin Malabars have again reported a steady turnover. At the close the market was slightly easier at Rs. 6. Malankaras were also lower at Rs. 37-8 as., sellers and Velliamattams at Rs. 15-4 as. Kalpettas were well supported at Rs. 16-12 as. Among the lower priced shares Thirumbadis were easier with doubtful buyers above Re.1-8 as. Midlands sagged to Rs. 4-5 as.

Teas.—During the past few days there has been a sustained demand for Chembra Peaks which now have buyers at up to Rs. 3-5 as. Vellamalais changed hands in fair parcels at Rs. 10 to Rs. 10-4 as., but United Nilgiris were lower at Rs. 112. Periakaramalais were unchanged at Rs. 17-4 as., ex dividend while Peermades were offered in small parcels at Rs. 26-4 as. Kalasa Tea Ordinaries were supported at Rs. 5 while a small parcel of their 8% Debentures changed hands at Rs. 102. Ouchterloney Valley Debs. were also supported at Rs. 101 and Vellamalai 7% Debs. at Rs. 104. At the close a small parcel of Peermade 8% Debs. were offered at Rs. 106.

FORTNIGHTLY RAINFALL STATEMENT

March 3, 1940 to March 16, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty ...	...	1·30	124·89	126·19	25. Kotagiri ...	...	0·06	56·53	56·59
3. Kallar B'dge	...	2·57	162·84	165·41	26. Ootacamund...	...	...	55·71	55·71
4. Koney ...	...	1·93	123·70	125·63	27. Yercaud ...	...	...	72·00	72·00
8. Twyford ...	0·05	0·05	244·21	244·31	30. Devarshola				
9. Pettimudi ...	N.R.	N.R.	329·25	...	T.E.S. ...	...	...	77·58	77·58
10. Kalaar ...	...	...	236·59	236·59	31. Calicut ...	...	...	115·29	115·29
11. Chittavurrai...	0·01	0·42	41·46	41·89	32. Kuttiyadi ...	...	...	191·73	191·73
12. Bodi'kanur ...	...	1·10	20·17	21·27	33. Vayitri ...	...	...	151·16	151·16
13. Cochin ...	...	...	131·21	131·21	34. Manantoddi...	...	...	83·97	83·97
14. Mooply ...	...	...	130·62	130·62	35. Bilgiris ...	...	0·45	66·58	67·03
15. Pachaimallai	0·03	...	125·74	125·77	38. Pollibetta ...	...	...	61·18	61·18
16. Mudis ...	0·07	...	180·64	180·71	39. Coovercolly ...	N.R.	N.R.	74·22	...
17. Pollachi ...	...	...	33·06	33·06	41. Kadamane ...	...	...	265·55	265·55
18. Ropeway					43. Merthisub'gey	...	...	99·02	99·02
Waterfall ...	...	...	97·16	97·16	45. Balehonnur ...	...	...	88·62	88·62
21. Kerala Estate	N.R.	N.R.	148·85	...	46. Mangalore ...	...	...	116·41	116·41
22. Naduvattam	...	...	118·33	118·33	47. Madras ...	0·02	0·10	33·82	33·94
24. Coonoor ...	...	...	48·66	48·66					

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The President of the Association issued towards the end of February an appeal to Planters on behalf of War Charities. Subscriptions and donations are now being received in reply to that appeal, and lists of the receipts from the various districts will be published regularly in the *Planters' Chronicle*; Honorary Secretaries of District Associations have of course already been informed of the subscriptions from their own districts. We believe, however, that in some cases there is a reluctance to subscribe because planters wish to be sure that their contributions will go overseas to those actually engaged on active service, and are not certain that it is possible to ensure that they will be so used. This desire is quite understandable, and the Association accordingly addressed the Secretary of H.E. the Governor's War Charities Appeal Fund in Madras. The following reply will we hope entirely reassure members on this point:—

'H.E. the Governor's War Charities Appeal Fund is appealing for funds under 3 headings with a particular request that each donor should indicate the heading under which the donation is intended to fall.

(i) Donations towards Red Cross Work as such, including purchase of material for making bandages, surgical instruments, splints etc. for the sick and wounded.

(ii) Donations towards "Amenities" for healthy troops (including Royal Navy, Royal Indian Navy and Royal Air Force) such as garments, cigarettes, literature etc.

(iii) Donations to H.E. the Governor's War Purposes Fund: Such donations, if the donors wish, may be specifically earmarked for particular purposes—e.g. St. Dunstan's Indian Branch (for blinded soldiers), the Mercantile Marine (e.g. King George's Fund for Sailors) or any other war purposes not covered by Nos. 1 and 2. Any charities arising out of the War, such as relief to Poland or Finland, can be included.

Primarily, the sums collected under head Nos. 1 and 2 would be used for the benefit of Indian Troops and other units coming under the head of the Indian Army, which would include British Units also. But, if the donor wishes his donations to go to troops belonging to other expeditionary forces, there is no reason why he should not earmark his donations as such, in which case, they would be dealt with by the Governor's War Purposes Fund after head No. 3.

> Donations under head No. 3 are forwarded to H.E. the Viceroy's War Purposes Committee in Delhi, through whose machinery they are distributed according to the donor's wishes.
>
> The local Joint War Committee, which applies for donations under heads 1 and 2, is given information and instructions from the Central Committee in Delhi as to the urgent needs and requirements of troops under the 2 main headings—"Red Cross Work" and "Amenities". The Central Committee in Delhi is in very close touch with the Army and similar authorities, and is therefore in a position to furnish information as to the particular requirements at any particular time.'

It will be of interest also to the readers of the *Chronicle* to learn from time to time of the progress of those of our community who are engaged in active service in this war. There appears below a list of planters whose offer to serve has been accepted; in some cases we know also the unit with which they are serving, but in many cases these officers are still in training at Belgaum. The list will, with the help of District Associations, be kept up to date; and we would take this opportunity of reminding readers that the pages of the *Chronicle* provide a most convenient medium, which will be readily placed at their disposal, for information regarding the military careers of particular planters likely to be of general interest. Future lists will contain also the names of employees of the Companies in South India most closely connected with planting.

South Indian planters gave of their best in the last war; once more there is this distasteful and dangerous job to be done, and the response is no less keen than it was twenty-five years ago.

Name		*Address*
Anamallais—		
Thomas McCosh	...	Akkamalai Estate, Valparai P.O.
H. F. M. Winterbotham	...	Kanujamalai Estate, Valparai P.O.
Coorg—		
Lt. G. Breithaupt	...	Greenfield Estate, Sidapur P.O.
Capt. A. M. Webb	...	Sidapur Estate, Sidapur P.O.
Mysore—		
M. D. Hopkinson	...	Attikan Estate, Attikan-Mysore P.O.
R. B. Macqueen	...	Arabidacool Estate, Chikmagalur P.O.
L. Newcome	...	Cowcoody Estate, Somwarpett P.O.
D. L. Winckler	...	Laldy Estate, Mudigere P.O.
Nilgiris—		
L. G. Elkington	...	Kodanaad Estate, Kotagiri P.O.
M. Gilbart-Smith	...	Ouchterlony Valley Estates, Naduvattam P.O.
C. L. Greig	...	Craigmore Estate, Kullakamby P.O.
P. A. Henderson	...	Rob Roy Estate, Kotagiri P.O.
K. D. E. Mackenzie	...	Prospect Estate, Naduvattam P.O.
C. C. Metcalfe	...	Rockwood Estate, Nellakota P.O.
W. E. B. Milner	...	'Eversley', Coonoor.
W. G. Stonehouse	...	Daverashola Estate, Devarshola P.O.
Travancore—		
P. Ambler	...	Malayalam Plantations Ltd., Quilon.
G. A. Brooke	...	Yendayar Estate, Mundakayam P.O.
H. R. Clarke	...	c/o K. D. H. P. Co., Ltd., Munnar P.O.
W. B. Cooke	...	Do.
J. D. Dickinson	...	Arnakal Estate, Vandiperiyar P.O.
G. W. A. Edwards	...	Glenmary Estate, Peermade P.O.
M. A. C. Jackson	...	Koliekanam Estate, Fairfield P.O.
P. B. Leahy	...	Granby Estate, Vandiperiyar P.O.
C. H. S. London	...	c/o Harrisons & Crosfield, Ltd., Quilon.
R. E. C. James	...	Granby Estate, Vandiperiyar P.O.
C. T. Monckton	...	c/o K. D. H. P. Co., Ltd., Munnar P.O.
A. R. C. Perceval	...	Do.
J. B. Soutar	...	Do.
C. G. Sowerby	...	Do.
R. R. Tewson	...	Do.

INDIAN COFFEE MARKET EXPANSION BOARD

Quarterly Report for the last quarter of 1939 of the Director, Indian Coffee Propaganda, India House, London.

A meeting of the Indian Coffee Market Expansion Board was held at India House at 3 p.m. on October 18th, 1939.

Demonstrations at Canteens.—In September the Board offered their services in organising the serving of Indian coffee at canteens which had been set up for the duration of the war. In the Borough of Chelsea, where a start was made in October, the Board supplied Indian coffee free of charge over an initial period which extended from one to four weeks. The shorter period was considered sufficient for small canteens, and the longer period for large canteens with a considerable number of voluntary canteen workers, who would have to acquire the simple art of making good coffee before it could be assured that the serving of coffee in the cup would not fall off after our lady demonstrator had left. The excellence of the Indian coffee made under our directions was so much appreciated that not only was a considerable increase noticed in the consumption of coffee, but the authorities in charge of the canteens one and all decided to continue to serve Indian coffee; and it is satisfactory to be able to report that with the exception of one canteen a high standard of brewing coffee has been maintained.

Our work covered five A.R.P. Canteens in The Borough of Chelsea—The Chelsea Town Hall, The Chelsea Polytechnic and The College of St. Mark and St. John, The Victoria Children's Hospital and The Carlyle School. At the same time coffee retailers in Chelsea were successfully approached to co-operate by making a special effort to push their sales of a straight Indian coffee, and we have since been informed of a growing demand for Indian coffee as the outcome of our work in Chelsea.

Two canteens in The Borough of Westminster were also included in our scheme—The Berkeley Square canteen and The Adelphi canteen. Credit is due to the tact and ability of our demonstrators who carried out their duties to the entire satisfaction of the canteen authorities and who obtained the full co-operation of the voluntary staffs, in whose hands rests the success of our enterprise after our demonstrators have left. They have been equally keen on taking a real interest in keeping up the reputation which their canteens had acquired for excellent Indian coffee.

The National Gallery.—Midway concerts were being held at The National Gallery on every weekday except Saturday, and large crowds were attracted by the programmes arranged by Miss Myra Hess. The concerts are expected to continue for the duration of the war and the admission charge is at the popular price 1/-. Shortly after the commencement of these concerts Lady Gater organised and started a sandwich bar to provide a light meal for that section of the audience who might otherwise have to forego a mid-day meal. It was largely due to the flattering remarks made regarding our work at Chelsea that Lady Gater asked me to call on her to discuss the possibility of our Board helping her in the organising and serving of coffee. Lady Gater agreed to my suggestion that we should provide all the equipment and the services of a demonstrator for a period of one month, and that she should meet the cost of electric current and supplies of Indian coffee, sugar and milk. Sir Kenneth Clark, the Director of The National Gallery, in kindly giving his consent, requested that only plain showcards with the words 'Indian Coffee Served Here' should be displayed, and that leaflets on 'How to Make Indian Coffee' should be given away only on request.

The daily attendance is between 500 and 1,500, and adequate arrangements had to be made to serve a large number of people in a short space of time, namely directly before the concert at 12-15 p.m. to 1 p.m., and again immediately after the concert from 2 p.m. to 2-30 p.m. For this purpose we are installing one 10-gallon water boiler and three 2-gallon porcelain-lined urns which were kindly loaned by the Central London Electricity Company on favourable terms. Lady Gater arranged for a fine blend of pure Indian coffee to be supplied by a well-known coffee firm in 1-lb. tin containers, and the serving of Indian coffee at The National Gallery was started on the 14th of November, 1939. A simple method of making coffee was employed. One pound of Indian coffee was emptied into a hot 10-pint enamel jug. The jug was half filled with boiling water. The brew was stirred with a wooden spoon and allowed to stand for a few minutes, when it was again stirred and topped up with boiling water. After standing for a few more minutes it was decanted into the urns. (It was found that exactly one gallon of liquid was obtained by this method from one pound of ground coffee.) Perfect coffee was the result. On the first day the demand was under-estimated so that only half the number of people were served. The next day Lady Gater increased her voluntary staff. More helpers were put on to serve the coffee, more to help with the washing up, more to carry water through several galleries from the filling tap, and an assistant was provided to help our demonstrator with the making of coffee. From that day on the serving of Indian coffee has run most smoothly. By December the 16th it was felt that the voluntary workers could carry on without further assistance from Miss Monte, our demonstrator. Lady Gater in thanking our Board expressed to me her appreciation for the hard work which had been put in by Miss Monte, and her committee showed their personal appreciation to Miss Monte by presenting her with a Christmas gift. I should say that the making of sometimes as many as 720 cups of coffee in a short time not only required working at full pressure but necessitated considerable judgment to keep up a constant supply to meet the demand and to avoid being left with brewed coffee after all had been served. Lady Gater and our Board were fortunate in that Lady Grant was able to take over from Miss Monte. Lady Grant was determined that the high reputation which Indian coffee had now achieved at The National Gallery concerts should be continued, and her efforts have been rewarded by a persistent increase in the number of cups of coffee served. The speeding up of the serving to meet the increased demand was made possible by Lady Grant introducing coffee tickets. Two helpers were put on for the sole purpose of selling coffee tickets which allowed those at the counter to pour out coffee without being hampered by the collection of money and the giving of change.

The Board owes a debt of gratitude to Lady Gater for the co-operation which she and her voluntary staff have extended. They have taken the greatest care in serving Indian coffee well made and hot, and they have always made sure that questions as to where Indian coffee could be purchased were fully answered. The whole of the proceeds from entrance fees and the profits of Lady Gater's Lunch Bar go to The Musicians' Benevolent Fund, and it is pleasing to note that the serving of Indian coffee has considerably swelled the amount of the cheques which Lady Gater has been able to present to charity.

The discreet publicity obtained for Indian coffee at The National Gallery has been by far the most successful coffee scheme of this kind which has been staged by the Board, and this, together with our work at other canteens, has fully compensated the Board for the loss of public exhibitions.

The Y.M.C.A.—Contact has been made with The Young Men's Christian Association. The Officer-in-charge of The Metropolitan Area, who kindly granted me an interview, informed me that the quantity of coffee consumed at their station canteens was hardly sufficient to justify the expense to which our Board would be put by offering the services of one of our demonstrators to supervise the making of coffee. He suggested, however, that I should get in touch with the canteens at Waterloo and Liverpool-street stations. On visiting these canteens I had to agree that there was little prospect of popularising Indian coffee at these centres. The Y.M.C.A. then informed our Board that they would welcome our help in organising the serving of Indian coffee at a canteen under their control to be opened at British Columbia House for Canadian troops.

I had the pleasure of meeting the Committee in charge of this canteen, and after they had had an opportunity of tasting Indian coffee they agreed to Indian coffee being served, and considered that it would meet with the approval of the Canadian Troops. The British Columbia House canteen was opened on December 21st, on which day the Press were invited to be present. It was previously arranged that one of our demonstrators should make the Indian coffee on that day and that our demonstrator should return to work in the canteen for a period of one month beginning in the New Year, by which time the Canadian troops would have arrived in London. The Opening Day passed successfully, and the Indian coffee served in the Canadian way was approved. An account of our work at this canteen will be included in the next Quarterly Report.

The Navy, Army and Air Force Institute.—I had the pleasure of calling on the coffee buyer of this Institute, who are considerable purchasers of coffee in peace time, and, with the increase of the fighting services in time of war, their purchases naturally increase. The buyer was well versed in the merits of Indian coffee and saw no reason why the purchases of Indian coffee should not be increased. He promised to consider increased purchases with the arrival of the Indian new crop. The question of our Board co-operating with the N.A.A.F.I., by endeavouring to improve the standard of coffee served at canteens, was raised, and it was pointed out that a difficulty arose in that civilians would not be allowed at Military Camps. The Board are keeping in close touch with the N.A.A.F.I.

Display Material Distribution.—The distribution of display material during the last quarter of 1939, as seen by the attached list of window and counter displays, shows no falling off as compared with the same quarter of the previous year. This is due to the fact that the Assistant Director, who, it will be remembered, is in charge of this section of the Board's propaganda, has kept Indian coffee display material continually in front of our friends in the trade. This has entailed heavy work, and, through personal correspondence, she has been successful in maintaining the interest of both wholesalers and retailers throughout the country at a time when the introduction of rationing was taking up most of their attention.

Press Advertising—Daily Telegraph.—A six months' programme of advertising in *The Daily Telegraph* was started on the 5th October, 1939, and will continue until the 28th March, 1940. An Indian coffee advertisement appears each Thursday on the title corner space of the back page directly above the announcements of Births, Marriages and Deaths. The copy for this space of 4″ x 1¼″ is short and easily read, and is changed from time to time. Copy of advertisements which have appeared already include:—

'Coffee keeps you going, Drink Indian Coffee.'
'Start the day right with Indian Coffee.'
'Indian Coffee has life in it.'
'Coffee keeps you alert. Drink Indian Coffee.'

These advertisements may be described as prestige advertisements, for, besides the direct public appeal, they are welcomed and approved by the trade.

STORIES FROM A PLANTERS' CLUB

'ADVENTURE AND MISS ADVENTURE'

BY

'JEFF'

Conversation in the Club had turned (as it so often does now-a-days) to the absorbing topic of 'who will be called up next, and when'.

Old Bollard, whose services in the last War were confined to trebling his income while he attended occasional parades in his spare time and a 'camp' or two at Blottopur, where he distinguished himself by drinking twice as much beer as anyone else (no mean achievement), had just remarked to Denning, who had left a foot behind in Mespot, where he had just missed a V.C. and narrowly escaped an O.B.E.: 'Well, Denning, we're too old now for them to want *us* again' . . . when Hybrow bridged an awkward pause by enquiring of no one in particular why the hell young Rashleigh had been selected for a Cadetship.

'Why Rashleigh of all people' he repeated bitterly. 'Everyone knows that he's ivory from the neck up. I suppose the fact that old Scattering-Blood is his fifth cousin has done the trick for him.'

As Rashleigh is a popular youngster the discussion would have taken an acrimonious turn had it not been for a suave interruption from the Oldest Planter. 'In effect, Hybrow,' he said, 'you have raised the interesting question as to which is the more important attribute in an officer: brains or guts. . . . Speaking for myself, I think the answer may be said to be: for the Staff Officer:—Brains; and for the Regimental Officer:—Guts; though this is admittedly a rough and ready distinction.'

'This question recalls to my mind the interesting case of Knitwhit-Burn, during the last War, about which it would be discourteous not to satisfy your obvious curiosity.' Ignoring a particularly revolting sneer from Hybrow, he continued: 'K-B, as he was called, combined lack of intelligence with the romantic disposition in an unusually marked degree; and, unless one has ample private means of course, these two "endowments" make an unfortunate combination. The one advantage it bestowed upon K-B, however, was the acute development of his personal courage and audacity. Indeed, Nature herself seemed to conspire towards this end; for, with K-B and a pretty girl in the offing, you could be fairly certain that every venomous reptile, centipede or scorpion which happened to be in the vicinity would make a dash for the girl as if for the express purpose of giving K-B the opportunity of grappling with them all simultaneously. To "sit-up" for a tiger with K-B was almost as much as any woman's life was worth, as an outsize of "stripes" was practically certain to land on the "machan" just to give K-B the chance of ramming his gun down it's throat, just as it was about to maul the lady. . . . Rough on the girls rather; but first rate training for K-B.

'I well remember his most famous exploit in 1913, when he rescued a Colonel's wife from a two-storied bungalow which had caught fire during the night. K-B was at his most spectacular on that occasion; but he got precious little thanks for it, poor chap, as the lady stoutly maintained that there would have *been* no fire if K-B had not been staying there. . . . Feminine logic? Perhaps; though the fact that, when she "came to" after the rescue, she found herself in flannel and hair-curlers and without her only *toupet* (which had perished in the flames) may have had something to do with it.

'However, to get back to the story:—In 1914 K-B's failure to pass out of Sandhurst (for which he had been nominated in the first place, of course) plus his prowess on the Stiff Range Polo Field, which had won the approval of a visiting General, procured him a Commission in an

Indian Cavalry Regiment. And in due course he arrived in Mespot, where he distinguished himself by what the despatches called "his complete disregard of danger", but which may equally have been his sublime disability to recognise danger when he saw it. . . . "I never *think*," he would reply cheerfully, when questioned about some more than ordinarily daring raid into enemy country—and, after all, no Army wants Regimental Officers who think too much—so K-B throve.

'It was during the last stages of the War that Romance made its unexpected appearance in the Arabian Desert in the person of Sadie MacWhirtle, the only daughter of the well-known American millionaire. She was exploring Arabia with a sort of "Rosita Forbes" outfit, plus a monstrous supply-train about five miles long.

'As a matter of routine it was K-B's job to intercept and search this caravan; and his surprise encounter with the fair Sadie, who had been in serious difficulties owing to the desertion of her armed escort, roused his romantic feelings to fever pitch. It was a typical K-B situation, in fact; and he was just settling down to enjoy it when his plans were rudely interrupted by orders from Headquarters instructing him to strike his camp at El Wogghlhh and attack without delay.

'I should mention here that, owing to severe casualties, K-B was the only British Officer with his Regiment, and so was in temporary command. The orders he had received were brief and very urgent: he was to make a forced march across the desert and dislodge an enemy detachment holding a position indicated by the "grid" map-reference 695803—a perfectly straightforward "grid" reference to anyone but K-B, who regarded it with some misgivings.

'Another complication was the proximity of hostile Bedouin, who were known to be on the track of Sadie's caravan, which made it clearly impossible for K-B to leave her unprotected in the desert. Well, during a council of war in K-B's tent, Sadie MacWhirtle declared her willingness to place the very considerable resources of her caravan at the disposal of the British Army, and accompany K-B's expedition as a sort of millionaire vivandière.

'The imperative necessity of some such arrangement will be obvious to anyone with any knowledge of the Bedouin, who are, as you are probably aware, a fierce nomadic race, usually out for any loot which may be going. A note on them (taken from *Gresham's Compact Encyclopedia*) may be of interest to the ladies:—"The ordinary dress of the men is a long shirt, girt at the loins, a black or red and yellow handkerchief for the head, and sandals; of the women, loose drawers, a long shirt, and a large blue shawl covering the head and figure. The lance is their favourite weapon". . . . Tough eggs, you see, and no respecters of millionaires' daughters. However, I must go back to that council of war we were talking about:—

'Topography had never been K-B's strong point, and the tattered condition of his maps made them almost unreadable in any case; so that he had been delighted when he found that Sadie had been presented with brand new maps of most of Arabia and the Middle East by an impressionable young American Consul. This made the plotting of his "grid" reference very much easier, though he was rather appalled to find that the spot 695803, which he had to attack, was almost exactly 400 miles away, so that to reach it he would have to undertake a series of forced marches across trackless and waterless desert, without guides, on compass bearings.

'Fortunately, the enormous supply-train with the caravan made the thing possible, and he got to within striking distance of his objective without the loss of a man, a horse or a camel.

'Knitwhit-Burn's famous dash across that appalling stretch of desert, culminating in the Cavalry charge which surprised and routed a whole Turkish Brigade at the Wadi Dungghg, is a matter of history—even if it is not so generally known that this brilliant operation was carried out against an objective exactly 400 miles away from the map reference intended by the General.

'After all, "nothing succeeds like success", and the spot *was* 695803 on K-B's "grid"—even if he had used the wrong map!

'Yes, of course he married the girl. . . . My object in telling you this story is to bring out my point, which is: that dash and guts will sometimes compensate for brains quite satisfactorily in war, that's all . . .'

But all Hybrow had to say was: 'Well, well, old boy, you do talk a lot of tripe, don't you?'—which we thought was uncalled-for.

THY BROTHER'S KEEPER

(An Epic of Scandinavian Courage)

Three men were neighbours in a town,
Their houses, side by side,
A murderer crept in one night,
And the attacked one cried,
And called out to the other two
To come and bring him aid,
But they were silent in the dark
As they were sore afraid.
They crept and held a council
By a guttering candle flare,
And though they did not say it then,
They knew they would not dare
To pry inside their neighbour's house,
Lest, as they looked within,
The felon should perceive them there,
And bruise their dainty skin.
And so they sat and whispered,
While the victim's cry grew faint,
That they would surely help him
If conditions weren't so quaint.
And lest the other people heard,
That lived just up the street,
And came to aid the luckless man
On anxious, hurrying feet,
The two decided that they'd shout,
And challenge 'Hold your speed!'
Because, if they delayed enough
They knew there'd be no need.

CO-ORDINATION OF LABOUR LEGISLATION IN INDIA

A concrete result of the two-day session of the All-India Labour Conference, which ended on January 23rd, is the general agreement that the Central Government should draft legislation on four important subjects in the light of the discussions on them and send the draft to the Provincial Governments, who would examine it and express their views so that the next Labour Conference to be called in January, 1941, would have before it definite data to decide whether the Government of India could proceed with legislation.

The draft bills relate to industrial disputes, holidays with pay, collection of industrial statistics and amendment of the Payment of Wages Act.

The Conference also generally agreed that Provincial and State Governments should examine other subjects like sickness insurance and extension of legislation to workers in commercial establishments and shops and make definite suggestions regarding the line of future action on them.

Two features of the discussion are stressed. Firstly, the Provincial Governors' Advisers, who attended in the absence of Ministers from some provinces generally expressed views which they believed were those of the ministers when they were in office. The proposal for holding the Conference was made some time last year when the ministries were in being and they had a certain amount of prepartory work for the Conference carried out by way of memoranda on the subjects for discussion. Their views had thus been fairly fully formulated and recorded. Secondly, the Conference was free from any suspicion that under the guise of co-ordination an attempt was being made to usurp provincial powers.

There was general agreement among those present that the discussions had served a valuable purpose and that similar gatherings should be held every year.

On the question of the prevention and settlement of industrial disputes, the main question before the Conference was whether any advance was desirable for the country as a whole on the Industrial Disputes Act of 1929 passed by the Central Legislature. The Conference agreed that advance by the country as a whole was desirable on the Act and such advance should be undertaken by Central legislation so that Provincial Governments and Indian States might follow that model and advance on lines suited to local conditions.

The Conference agreed that the Central Government's undertakings in the provinces, such as railways, should be excluded from the scope of provincial legislation, but that in such undertakings, the control of conditions of labour and execution of power conferred by legislation should vest in the Centre.

The Conference felt that paid holidays should be given to workers deprived of weekly holidays, particularly in organised industries. The general opinion was that central legislation in the form of an enabling bill on the lines of the Employment of Children in Dangerous occupations Bill was desirable.

The Conference agreed that the collection of statistics with reference to industries and labour was most desirable; that their value would depend upon the adoption of uniform procedure and method; that collection could be done only if there was statutory compulsion; that the best way was to pass a Central Statistics Act on a simple basis; and that the power of making rules under the Act should be left to the Centre in view of the need for uniformity.

The Conference discussed the difficulties which had arisen in the working of the Payment of Wages Act, 1936, particularly with regard to definition of the word wages; whether, for instance, the term 'wages' includes bonus. The problem was found to be mainly one of interpretation. The intention was understood but the question was whether the language of the Act carried out the intention. The Conference recommended that Provincial Governments should send in definite suggestions based on the working of the Act so that the amendments proposed by the Government of India could be put into final shape.

The Conference found that on the question of sickness insurance the difficulty was that organised labour had hitherto refused to accept its obligation to contribute a share to the fund. This fund is for use not so much on the actual provision of medical facilities—in big cities and in organised industries, such facilities are either given by the employers or the Government—but on the maintenance of the worker and his family during the period of enforced idleness owing to illness. It was proposed at the Conference that both employers and trade unions should be addressed to find out if they would agree to contributing a share to the sickness insurance fund.

On the question of extension of legislation to labour employed in commercial establishments and shops, it was noted that this was a new field of legislation in which only Bombay, Bengal and the United Provinces had ventured. It was, therefore, felt that the time was not ripe for all-India legislation, although on specific points like the compulsory closing on one day in the week, an enabling measure might be attempted.

—*Industrial Bulletin.*

LABOUR DEPARTMENT, U. P. A. S. I.

NOTICE

From April 1st 1940 the following changes will take place in the Palamcottah Division of the Labour Department.

The Bodinayakanur and Uttamapalayam agencies will be closed. To take their place a new agency will be opened at Theni in charge of the ex-Bodinayakanur agent, Rao Sahib A. S. Alagamnan Chetty.

The agency at Sivakasi will be reopened and will be in charge of R. Gopalakrishnan, formerly agent at Vasudevanallur. The latter agency will be in charge of V. Thirumalaisamy Ayyangar, former Uttamapalayam agent.

The agency at Panagudi will be closed and the agent's services dispensed with.

Coimbatore,
March 29th, 1940.

A. H. MACKIE,
Director, Labour Department.

IMPORTS OF TEA INTO THE UNITED KINGDOM

Information received in response to enquiries made regarding the nature of the restriction involved by the Import of Foods (Prohibition) No. 4 Order 1940 dated the 24th January, 1940, confirms that while this Order does not affect teas shipped by the Tea Controller for India it will prevent the entry of private exports of tea not covered by a license granted by the Government of the United Kingdom and that this restriction applies to tea sought to be imported into the United Kingdom by parcel post. It is learnt also that the Ministry of Food is unwilling to recommend to Government that licenses should be issued in respect of small quantities of tea.

NUTRITION IN THE COLONIAL EMPIRE

The Report on Nutrition in the Colonial Empire[1] which has recently been published is a document of considerable importance. It has been prepared by a committee of the Economic Advisory Council under the Chairmanship of Lord De La Warr. The committee was set up to consider the information received as a result of a circular despatch sent out while Mr. J. H. Thomas was Secretary of State for the Colonies. It will continue in being to advise on matters affecting nutrition in the Colonial Empire. Attached to the report is a second volume[2] containing a summary of the information available about nutrition in the different parts of the Colonial Empire. In a foreword, the Secretary of State for the Colonies says that 'the fact that Colonial Governments have already ordered over four thousand copies of the report indicates impressively the importance which they attach to it and the wide distribution which they contemplate. I hope' he continues 'that it will also be studied by employers of labour in the Colonial Empire, by missionaries and by all others interested in the welfare of its people.'

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[1] Cmd. 6050, price 3s.

[2] Cmd. 6051, price 2s. 6d.

The committee has no doubt that improved nutrition could bring very great benefit to the Colonial Empire, not so much by the eradication of disease, though this is important, as by a general improvement in the standard of health and well-being. After a chapter in which the principles of correct nutrition are clearly set out, the report discusses the principal characteristics of Colonial dietaries. The latter have been found to be predominantly vegetarian, in most parts of the Colonial Empire only very small quantities of animal products being consumed. Milk in particular is very rarely consumed indeed. Many peoples also in the Colonial Empire are very dependent on a single crop. In general, Colonial diets are apt to be low in first class proteins, in fats and in green leafy vegetables and fruits. Calcium and phosphorus also appear to be widely deficient. Deficiency of vitamin D is not widely reported, but the remaining vitamins appear to be lacking to a larger or smaller extent. The general conclusion is that 'there are few of the constituents considered necessary in Europe for a nutritionally adequate diet which are generally available in sufficient quantities in the Colonial Empire.' There are few parts of the Colonial Empire, or indeed of any tropical country, where the diet of the majority of the population is at present anything like sufficient for optimum nutrition. Diets are often insufficient in quantity and still more often insufficient in quality. If they are bulky, the bulk is too often made up of foods that do not supply all the needs of a balanced diet. Judged by European standards they lack variety and they lack protective value.

It is not easy to distinguish between the effects of food deficiency and those of infections, such as hookworm or malaria. Nevertheless, the effects of malnutrition are serious. Firstly, there are many diseases which are known to be directly caused by dietary deficiency. Secondly, there are others which, if not directly caused by them, are at least aggravated by them. Thirdly, an insufficient diet weakens resistance to diseases of all kinds and leads to inefficiency and lack of wellbeing. The committee has no doubt whatever that these conclusions are correct. It suggests that they should have great significance for Colonial Governments and affect many aspects of Government policy. Money spent on improving nutrition should be a sound investment yielding its dividend in the increased welfare of the community as a whole.

The general conclusions reached by the committee only confirm the belief which has been growing up in informed circles during recent years. It has realised, however, that the analysis of the present situation is only a part of its duty and the greater part of the report is taken up with the discussion of ways and means of improving matters. The committee throughout has insisted on the necessity of a realistic and practical approach to the problem. 'In Colonial conditions it is not useful to say that the aim should be that every man, woman and child should consume four or five or six pints of milk a week and that until they do so they cannot be well nourished, for such a state of affairs is far beyond the realms of possibility.' The exact measures to be taken must vary in each territory and the committee puts forward a large number of ideas and recommendations, all of a practical nature for consideration by each Colonial Government.

The two main causes of malnutrition in the Colonial Empire, apart from the prevalence of diseases, which often have a weakening effect, are first and most important, the low standard of living, and secondly ignorance coupled with prejudice. A subsidiary factor in some territories is the increase of population.

The low standard of living does not necessarily mean in the Colonial Empire, as it would mean in this country, a deficiency of money resources, for in many parts of the Colonial Empire the people are still largely independent of money. What it does mean is that the foodstuffs which they produce, supplemented by the money obtained from the sale of produce, wages, or some other source, are very often insufficient to provide adequate nutrition in addition to all their other needs. The reason for this is not necessarily that the available income is badly distributed, that some have too much while the majority have too little. Much more fundamentally it is due to the fact that the total income of the community is at present too low.

The problem is thus largely one of economic development. Primarily in the Colonial Empire economic development means improvements in agricultural production. Predominantly the people of the Colonial Empire get their living by agriculture. Accordingly, two chapters are devoted to agricultural questions. Close co-operation between the Departments of Health and Agriculture is stressed. It is for the Health Departments to say what is deficient in the existing state of nutrition and for the Agricultural Departments in consultation with the Health Departments to consider how the deficiencies can best be met. The aim of the Agricultural Department should be the establishment of a balanced agriculture which, while safeguarding soil fertility, meets the food requirements of the people and gives them the greatest cash value for the products which they sell.

Family production of food to meet family needs is regarded as most important. It is a great safeguard against the worst social and economic effects of fluctuations of income from money crops, and it has many other merits. Accordingly Colonial Governments should make it their policy that as many people as possible should grow at least part of the foodstuffs which they themselves consume, that, where a labourer for wages is more or less permanently employed on an estate, the estate owner should be encouraged to provide him with land for a garden or for maintenance of animals, and that where there is a landless class they should be provided with at any rate some land, even if not enough to give a complete livelihood.

In considering the desirable additions to Colonial diets the first requisite is that the energy needs should be supplied. At the same time energy-giving foods are not sufficient by themselves unless the other requirements for a good diet are also present, and it is recommended that a good working rule would be to endeavour to increase the quantity of foodstuffs consumed by increasing the variety.

New Crops.—Where population presses hardly upon the land the energy yield of foodstuffs per acre is all important. It is shown that animal products have a low energy yield per acre but cereals and particularly rice a high yield. The various crops that may be useful for the improvement of nutrition in the Colonial Empire are next considered. A combination of cereals and legumes is nutritionally valuable and specially mentioned are soya beans (if properly prepared), groundnuts, red palm oil and fruits and green leafy vegetables generally. As regards animal husbandry, increased consumption of animal products is regarded as most desirable (although their energy yield per acre is low) and an increase of animal husbandry should also be beneficial from an agricultural point of view. After discussing the importance of putting the cattle population of Africa to economic uses the committee mentions that other animals may also play a valuable part. The tethered milch goat in some parts of the Colonial Empire may, they think, be very valuable, for the reason that the goat is hardy and not particular as to its diet, that its milk is not likely to be contaminated with tubercle bacilli and that it is an animal well suited to the means of the peasant farmer. Poultry and in some territories pigs may also be a useful adjunct.

Milk and Milk Products.—A separate section is devoted to the question of milk and milk products. The low consumption of milk products is one of the most striking factors in Colonial diets. Generally little or no milk is consumed after weaning. Milk is often actually disliked. There seems to be no prospect of quantities, anything like adequate by Western standards being brought within the reach of Colonial people, and the dangers of milk in tropical and sometimes primitive conditions are pointed out, because fresh whole milk, besides being the most valuable of all foods, may also be one of the most dangerous. These dangers are less present in curds and cheese, since the souring of the milk reduces the liabilities of contamination. There has been a substantial development of ghee manufacture of recent years in some parts of the Colonial Empire. This at least ensures the consumption of fats and of some part of the other constituents of milk without danger to health, but it is wasteful from the point of view of the community as a whole unless the skimmed milk which remains is also used. Skimmed milk is regarded as standing next to whole milk in the order of nutritive value of foods, since it contains all or practically all of the valuable constituents of whole milk apart from its fats and certain vitamins.

Part of the deficiency of milk supplies may be made up by imports of milk products, and in a valuable appendix the committee relates the cost of the various kinds of imported milk to the nutritive value obtained from them. This is a task which has never before been attempted. The conclusion reached is strongly in favour of imports of dried skimmed milk, at any rate for use in bulk. The committee finds that £1 spent on dried skimmed milk will give a very much larger quantity of proteins, calcium, phosphorus, iron and the B vitamins than the same amount spent on any other form of manufactured milk.

Fish.—The committee thinks that fish is the animal product which may perhaps be more useful than any other in supplementing Colonial diets. It accordingly welcomes the recent appointment of a committee to assist in the development of Colonial fishery resources.

A chapter is devoted to discussing the various methods of harvesting, storing, preserving, processing and cooking of foods. Perhaps the most important part of this chapter is the appendix by Dr. Platt on the subject of the processing of rice. It has long been known that beriberi, which is a disease prevalent among rice-eating people, is due to a deficiency of vitamin B_1 in the diet. Rice in its natural state contains a quantity of vitamin B_1 which should be sufficient, but it is often destroyed before the rice is consumed. Until recently it has been thought that the destruction occurred chiefly during the process of milling. The appendix to this report shows that even the most highly milled rice may contain quantities of the vitamin which are very nearly adequate if it is properly stored and cooked. This is a conclusion which may be of great importance in rice-eating territories, since so far efforts to persuade people eating highly milled rice to change their habits have met with small success.

In a chapter dealing with the purchasing of foodstuffs it is pointed out that the development of an internal trade by the provision of markets and communications may have a very important effect on nutrition. Imports of foodstuffs are only substantial in relatively few territories. In general the committee recommends that unless there is very good reason to the contrary they should be admitted free of duty. If it is desired to assist local production there is a good deal to be said for a subsidy rather than a protective duty.

One of the chapters is devoted to the nutrition of paid labourers.

The committee says that 'there is unfortunately abundant evidence that in some occupations where it is not customary to provide the employee and his family with food the wages earned are not sufficient to provide adequate nutrition for the worker and his family'. The obvious reaction to such a situation is to say that the rate of wages should be increased. 'Apart altogether from considerations of humanity and social justice, it may well be that increased wages may be justifiable as a purely economic proposition.' For various weighty reasons however an increase in wages may not always be the most immediately practicable way of improving nutrition. Various other measures could be taken by employers which would redound to their own advantage as well as to that of their labourers. In East Africa where it has been the normal practice for the employer to provide food for his labourers there is a considerable body of evidence to show that money spent on making the provision adequate for good nutrition is directly remunerative to the employer. This has certainly been the experience of the large mining companies on the Rand and in Northern Rhodesia, but with few exceptions those engaged in other occupations have not been quick to profit from this experience. The committee recommends that where it is customary to provide food for labour there should be legislation laying down as precisely as possible what the scale of rations given should be. 'We regard it as almost certain, that in Africa, quite apart from humanitarian considerations any money spent on bringing the food consumed by the labourer up to an adequate well-balanced ration will be money well spent from the immediate point of view of an employer.' Where it is not customary for the employer to provide food, as in West Africa and in other parts of the Colonial Empire, the committee still thinks that he would often find it in his own interests to give more attention to the food of his employees than he does at present. On certain estates in Ceylon, Malaya, Mauritius and elsewhere a certain amount of attention has been given to the subject, but, 'too often at present the employer is apt to regard his responsibilities as finished when he has paid his wage bill'. The committee recommends that employers should do their best to make gardens available for their employees and thinks that they would often find it to their own interest to provide foodstuffs of special nutritive value, such as meat, free or at cheap rates. 'This is' according to the committee 'a case where the interests of finance and humanity coincide'.

A long chapter is devoted to the factor of ignorance and the need for education and propaganda. The committee recommends special instruction on nutritional subjects to officers appointed to the Colonial Service. In regard to the education of the general population the greatest possible emphasis is placed on the importance of the part played by women. 'In many parts of the Colonial Empire it is hardly too much to say that they alone affect the nutrition of the people. In some parts of Africa . . . it is the women who decide what food crops to grow, who actually grow them, who reap them, store them, cook them and serve them. . . . If the family buys its foodstuffs it is the women who do the marketing. . . . Further, the women are naturally responsible for the feeding of infants and young children and their own diet during pregnancy and lactation can have a great influence on the health of their children. Finally, it is the women who are the home makers and who set the standard of life for the whole family. It is difficult therefore to exaggerate the importance of the women's part.' The committee therefore hopes that there will be a considerable increase in the education of women and greater use of women as Government welfare agents, school mistresses, health workers, midwives, etc.

With regard to the technique of welfare propaganda, 'no attempt has yet been made to collate and consider as a whole the experience gained in the Colonial Empire'. The committee regards the subject as so relevant to the question of nutrition that it not only considers the relative merits of several methods of propaganda but also suggests some twenty general principles which should be taken into account by any one who has to plan welfare propaganda. These should be very helpful to Colonial Governments. In regard to the education of the young in schools, the committee emphasises the importance of the school garden in rural schools and of the teaching of agriculture and rural health to boys; also domestic science in its simpler forms, to girls. In a good many parts of the Colonial Empire experiments have been made in the provision of meals and milk to school children, and the committee recommends that these should be extended so far as cost permits. In particular experiments with the use of dried skimmed milk are recommended.

In two final chapters it emphasises the need for further knowledge in regard to tropical nutrition and for co-operation between various Government Departments if there is not to be waste of effort. As the result of a recommendation made by the committee some time ago an organisation has already been set up under Dr. B. S. Platt to organise nutritional surveys in the Colonial Empire. The first survey in Nyasaland is now nearly completed and promises to yield most valuable results; other surveys are being organised in East Africa and it is hoped that before very long progress will also be made in other parts of the Colonial Empire.

It will be seen that the report covers a very wide field. It is to a large extent pioneer work, since a comprehensive survey of the question has never before been attempted. As the Secretary of State points out in his foreword, 'it is only within the last few years that the importance of this question has begun to be fully appreciated and that it has entered people's heads that Governments should seriously and actively concern themselves about it', and he is confident that the committee's report 'will do much to promote wise policies and improved standards of nutrition in the Colonial Empire'.

—*Tropical Agriculture.*

AVERAGE PRICES OF COMMON TEAS—FEBRUARY, 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	6	0	8	2
Tanjore	0	8	9	0	9	5
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	9	0	9	3
Tiruvarur	0	8	6	0	9	3
Pudukottah	0	8	0	0	8	5
Karur	0	8	4	0	9	5
Erode	0	8	2	0	8	8
Tiruchengodu	0	8	0	0	8	6
Namakkal	0	8	4	0	8	11
Salem	0	8	1	0	8	9
Dharmapuri	0	8	2	0	8	7

MALARIA WORK IN INDIA

Speech by Sir Malcolm Watson, M.D., LL.D., Director, The Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, London, at the Annual General Meeting of the Indian Tea Association, held in the Royal Exchange, Calcutta, on the 29th March, 1940.

Mr. Chairman and Gentlemen,

I have been asked to tell you something of what I saw and the conclusions I have reached during my recent tour of over two months in India. The primary object of my visit was to see what progress was being made in the control of malaria on tea estates. In the course of my tour I have seen tea and rubber estates in the Venture Valley, Peermade and Vandiperiyar Districts, the Anamallais, the Nilgiris and the Malabar-Wynaad in Southern India; gardens in Sylhet, and Cachar, in the Jorhat District, Nazira District, Doom Dooma District and the Tazpur District of Assam, and in the Dooars District of Northern Bengal. In all I have visited 101 gardens. I met many Planters and discussed their problems with them. In addition, I gave lectures at certain places and answered questions which showed the keen and the intelligent interest which the Planters were taking in their work. I met many Doctors who had reason to be proud of the work which they showed me. I visited Tocklai, and I would like to take this opportunity of thanking Dr. Carpenter and his staff for the help which they have so generously given to us in the past, and on which, I feel, we can count in the future. I have visited a number of the Field Research Centres organised by the Ross Institute, which although small and unpretentious, are doing invaluable work, for in them the Indian Malaria Surveyors are trained.

As you know, I have occasion to visit many parts of the world, and I can say without hesitation and without a qualification that in the last decade nowhere in the British Empire has such progress been made in the control of malaria as in the tea estates in India; it is a remarkable achievement.

You have heard of the work in the Roman Compagna. It is a great work. It has reclaimed land practically a waste for over two thousand years. During all that time malaria had swept over it so frequently that it had been impossible for people to establish themselves on it. From being a waste Signor Mussolini has converted it into a great agricultural land—a first class asset to Italy. I have seen it myself and have infinite admiration for it.

You also know of the great work done by the Americans in Panama in the control of yellow fever and malaria. In 1913 I visited it and made a careful study of the Canal Zone, which I published in 1915. In it I declared that in my opinion it was the greatest sanitary achievement the world had seen. And now I will say with regard to the work in India—(*a*) the best work on the Indian estates equals the best in Panama or Italy; (*b*) some of the methods used in India could be copied with advantage by Panama and Italy, and I propose to draw the attention of my friends in those countries to this subject; (*c*) the area in which malaria is controlled in Panama and Italy is insignificant compared with that on the tea and rubber estates in India.

The work to improve the health of the labourer has not been confined to malaria alone. There has been a definite improvement in the housing and sanitation of the European staff. The Indian labourers are now better housed than they used to be. On many estates there are small gardens attached to the house in which there are bored-hole latrines or pits for the use of the individual families. I was struck with the improvement in the water supplies. There are many new hospitals and many of the old ones have been improved. In quite a number of these hospitals there are trained Nurses and trained Midwives, and greater care is given to maternity and child welfare. The Research Centres and Laboratories attached to the hospitals have made it possible for the Medical Officers to do much better work than they could without the aid of microscopes and other apparatus for making exact diagnoses. This of course results in more exact treatment. I have been greatly impressed by the high standard of medical as well as preventive work done on so many of the gardens. The result of all this has been improved health of the Europeans, their wives and families. It has been possible for the wives to live on the estates without being in constant fear for the health of their children. There is consequently less neurasthenia, less invaliding and greater efficiency. In the same way, the health of the Indian and his family has improved in a remarkable way. The lowered sick-rates and death-rates are most impressive. The increased efficiency has led, as you are aware, to lowered cost of recruiting, lowered cost of production, and higher profits which are shared by European and Indian alike.

I have many impressive figures, but I want more and I believe they can be easily obtained. In this connection I would draw attention to the scheme for Standardisation of Health Returns from the tea industry prepared by Dr. B. A. Lamprell, and adopted with one or two minor changes by the Assam and Northern Bengal Branch of the British Medical Association. The scheme will reach you, I have no doubt, in a short time, and I would commend it to you for your adoption on your estates. It is not a medical stunt. It is sound business to know just how much sickness you have on your estates before you spend money on trying to eradicate it; and it is equally sound business to have the figures to show whether your expenditure has brought the results which you expected. I may say that it was on my insistence in 1911 on proper figures showing the extent of sickness, and how money was to be expended that led to so high a degree of efficiency in Malaya and so few failures, both in estates and in Government.

There is a second reason. Your Chairman has referred to the fact that agitators are from time to time causing unrest among the labourers on estates and one of their criticisms is that the health is not good. It is sound business therefore for you to have figures showing what you have done and what the health of the labourers is. On one group of estates alone there were over 100,000 fewer sick days in a year than they were 10 years ago. That is a big gain to the labourer. It is obvious that if you have similar figures from many estates it will give any impartial mind some idea of what has been achieved and how much the labourer has benefited.

I would like to refer for one moment to how this great improvement has come about. To more than any one man I would give the credit to the late Sir Charles McLeod. He used to say to me—'Watson, it is Malaria, Malaria, Malaria—that we have to fight. It is Malaria which is killing our people and handicapping our industries.' It was due to him that money was found for the creation of the Ross Institute. It was due to him, the late Lord Inchcape, Mr. James Warren, Mr. Walter Duncan, Mr. James Muir and Mr. E. A. Watson that the Indian Branch came into existence, for they financed it privately out of their own pocket. Three years later the Indian Tea Association took over the responsibility and now we have the advantage of a Committee of business men in India to promote this work.

As regards medical man, I never made a happier selection when Dr. Ramsay was appointed as Principal of the Indian Branch, after seeing the brilliant scientific and the excellent practical work that he had done in Cachar.

I would also like to mention certain other medical men, because they have taken an active part in training the Malaria Surveyors. They are—Dr. D. Manson, Dr. G. Fraser, Dr. C. S. P. Hamilton, Dr. B. A. Lamprell and Dr. J. E. Measham. Without the 500 Indian Surveyors who have been trained in the various Ross Institute Centres, progress would have been very much slower. To meet the Managers, to see their keen interest in removing this curse of ill-health is like the breath of my youth over again, for here in India as in Malaya the layman has shown himself to be a great sanitarian.

Here and there I heard complaints that progress was hindered because over the boundaries of the tea estates there were lands belonging to Indians in which mosquitoes were uncontrolled, and that these uncontrolled mosquitoes were adversely affecting the health of the estates. Although these lands cross the boundaries of the estates it is not an excuse for doing nothing. I would suggest that the problem should be solved not by legislation and resort to law courts. I believe that the best results could be obtained by trying to bring the two parties together for mutual co-operation and help. It is obvious that if the estates are suffering the inhabitants of the outside land must also be suffering, and the removal of malaria would be to the advantage of both. The Assam Government is co-operating with the Doom Dooma Tea Company to control malaria in the villages; and the Madras Government is controlling malaria in the village of Valparai in the Anamallais and in the Malabar-Wynaad in association with the estates. I believe that there is a great opportunity for Governments to help to bring about co-operation between the European gardens and their Indian neighbours. It will involve the Government in no expenditure. Most estates have the necessary staff and anti-malaria methods like flushing and shading are so simple that they can be effectively used at hardly any cost by the Indian peasants. Where the European estate has got the necessary staff I believe that they can, without any expense to themselves, do a great service to India by teaching their neighbours not only to control malaria but also how to improve water supplies and sanitation generally, with advantage to themselves and in this way they could convert a source of friction into good will.

The tea and other industries which are controlling malaria have done a great national service to India and I believe that they can do a still greater service. The Directors, European and Indian staff have reason to be proud of what has been accomplished in the last ten years.

Before closing I would like to refer to the fact that the Prime Minister, Mr. Chamberlain, found time to attend the Manson-Ross Luncheon last May, when more than most men, he saw we were moving to a war and he was busy organising our defences. He pointed out that the School of Tropical Hygiene was founded by his father who was distressed by the amount of sickness in West Africa. The late Sir Austen Chamberlain became Chairman of the Standing Committee of the Ross Institute, and I could turn to him at all times for help and it was always willingly given. The present Prime Minister has succeeded Sir Austen as Chairman, and in his address which you will find printed in the Annual Report, he closed with the words—'By my presence here today I have tried to show what importance the British Government attaches to its work.' He will be pleased, I am sure, to hear of your work; and I am equally sure that it will help him to carry the heavy burden that rests on his shoulders now.

NAPIER GRASS

With reference to the letter in this connection in our issue of 30th March, we are asked to say that for '1936' there should be substituted the figure '1926'.

TEA QUOTA PRICES

The Quota prices ruling in South India on 8th April were:—

Tea Export Quota ...	6 annas 2 pies per lb.
Internal Market Rights ...	1 pie per lb.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 30th March were:—

Rubber, including export licences ...	53.00 cents a lb.
Rubber Export Quota	18.50 cents a lb.
1st quality rubber alone	34.50 cents a lb.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

The season is now closed.

RUBBER.—London Rubber on April 8, 1940, 11*d*.

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sale on Apr. 2, 1940
Brooklands	1.05
Chittavurrai	93
Churakulam	70
Deviview	1.02
Parkside	97
Periavurrai	79
Selaliparai	77
Singara	1.08

Rubber

	Sale on Mar. 20, 1940
Ribbed Smoked Sheet ...	54¼
Contract Crepe ...	54
Mottled Brown Latex Crepe	51½ to 52½
Brown Scrap Crepe ...	51 to 51¾

The Madras Market

Current on 10th April, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

The intensification of the European War brought on by the invasion by Germany of two further neutral powers Denmark and Norway has resulted in a rise in values of most commodities and included in this recovery is raw rubber which from a low price of 10 13/16*d*. Spot has improved to 11⅛*d*. Spot today. Most of the leading speculative counters particularly steel shares were quick to follow the commodity trend and on Tuesday 9th April very sharp rises were recorded in all the speculative stocks of the Bombay market with active dealings taking place. This upward tendency however has not made itself felt to any marked extent in either tea or rubber shares although there are signs of a broadening of inquiry.

Rubber.—Cochin Malabars at one time sagged to Rs. 5-14 as., but at the close there are fair buying orders in the market at Rs. 6, with doubtful sellers much below Rs. 6-4 as. Vaikundams have met with limited inquiry at Rs. 7 cum the dividend of 5% while Kalpettas were also supported at Rs. 16-8 as., and Tropical Plantations at Rs. 15-12 as. Among lower priced shares Thirumbadis changed hands at down to Re. 1-8 as. with buyers over while Midlands recorded several deals at Rs. 4. Among sterling shares Kerala Calicuts were in demand at 1*s*. 4½*d*., at which price business was transacted. Poonmudis were wanted at the same price while Rani Travancores were bid at 12*s*. 6*d*.

Teas.—The feature in this section was the rapid rise in Chembra Peaks which on rumours of a pending interim dividend at one time advanced to Rs. 3-8 as., only to react on profit taking to Rs. 3-5 as. Vellamalais turned buyers at Rs. 10-4 as., but Peermades were freely offered at Rs. 26-4 as., and Periakaramalais at Rs. 17-6 as. Kalasa Teas were in demand at Rs. 5-2 as. Inspite of the declaration of the 4% final making 7% for the year Devasholas remained neglected at Rs. 7. United Nilgiris were also a quiet market at Rs. 110. Among debenture issues a block of Peermade 8% changed hands at Rs. 105 with buyers over. Ouchterloney Valley Debs. were in demand at Rs. 101 and Kalasa 8% Debentures at Rs. 102.

FORTNIGHTLY RAINFALL STATEMENT

March 17, 1940 *to March* 31, 1940—(*Inclusive*)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'39	Total	Stations	First week	Second week	Prev. from 1-4-'39	Total
2. Kalthuritty ...	...	...	126·19	126·19	25. Kotagiri ...	...	0·62	56·59	57·21
3. Kallar B'dge	0·03	0·01	165·41	165·45	26. Ootacamund...	...	0·20	55·71	55·91
4. Koney ...	...	0·06	125·63	125·69	27. Yercaud ...	...	0·15	72·00	72·15
8. Twyford ...	...	0·67	244·31	244·98	30. Devarshola T.E.S. ...	...	...	77·58	77·58
9. Pettimudi ...	...	0·20	329·25	329·45	31. CALICUT ...	...	...	115·29	115·29
10. Kalaar ...	...	0·15	236·59	236·74	32. Kuttiyadi ...	...	...	191·73	191·73
11. Chittavurrai...	0·11	0·03	41·89	42·03	33. Vayitri ...	...	...	151·16	151·16
12. BODI'KANUR...	...	...	21·27	21·27	34. Manantoddi...	...	...	83·97	83·97
13. COCHIN ...	0·03	0·05	131·21	131·29	35. Bilgiris ...	...	0·25	67·03	67·28
14. Mooply ...	N.R.	N.R.	130·62	...	38. Pollibetta ...	...	...	61·18	61·18
15. Pachaimallai	...	0·03	125·77	125·80	39. Coovercolly ...	N.R.	N.R.	74·22	...
16. Mudis ...	...	0·06	183·71	183·77	41. Kadamane ...	...	...	265·55	265·55
17. POLLACHI ...	...	...	33·06	33·06	43. Merthisub'gey	...	0·13	99·02	99·15
18. Ropeway Waterfall ...	N.R.	N.R.	97·16	...	45. Balehonnur ...	N.R.	N.R.	88·62	...
21. Kerala Estate	...	...	148·85	148·85	46. MANGALORE ...	...	...	116·41	116·41
22. Naduvattam	...	...	118·33	118·33	47. MADRAS ...	...	...	33·94	33·94
24. Coonoor ...	...	0·38	48·66	49·04					

N.R. = No Return Received.

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All Communications to be addressed to the Editor
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EDITORIAL

The U.P.A.S.I. Budget Meetings took place over the period 6th-9th April, and produced a fairly good attendance of members, in spite of the difficulty of obtaining accommodation at this time of year; the usual reports of the meetings will appear in our next issue.

At the Tea Section General Meeting, it was decided to raise the cess from 3 annas 6 pies to 4 annas per acre, in order to produce a slight surplus of income over expenditure in the coming year, instead of a deficit budget which would entail drawing on the reserves. The proposal to balance the budget met with unanimous support, and there was only one dissentient to the suggestion that the Tea Scientific Department budget for a slight surplus.

The Coffee Section General Meeting gave the Chairman an opportunity to explain the position regarding Cardamom Research, and to emphasise, in case there still remains any doubt on the subject, that this Association will co-operate most willingly in any scheme evolved with the approval of the Imperial Council of Agricultural Research, as a result of the preliminary survey which will probably be carried out this year. The Chairman referred also to the proposal for the formation of a special Cardamom Product Section; this is receiving careful examination, as there are reasons both for and against the proposal.

The last of the meetings was that of the U.P.A.S.I. as an Association when the Budget for the year 1940-41 was approved. At this meeting, the President informed members of the Committee's decision to approach Col. Brock, in order to discover whether he would be willing to return to his old post again for the duration of the war and thereby release the present Secretary for active service. Col. Brock, if we know him at all, will be looking for an active job himself in which he can do his share once more in this second fight against German stupidity; but in this very exclusive war the authorities may decide they have no post they can offer him, and we may very well see Col. Brock out here again. This we know would give very great pleasure to his many friends in South India. Col. Brock if he comes would not be expected to take over until September of this year.

The President announced also that the dates of the Annual General Meetings had been provisionally fixed for the period 3rd-9th August. Members attending these meetings are strongly advised to book accommodation now, as Coonoor is crowded with visitors and it will be extremely difficult to get living accommodation at short notice.

For the statistically minded, it may be of interest to note that there were eleven General and Committee or Sub-Committee Meetings, in addition to two Labour Department Meetings. The records for the longest and shortest meetings were both made by the Labour Department, whose General Meeting finished in less than five minutes but whose Control Committee Meeting seemed to go on for about three days.

TAILPIECE

The following is told as a true story in a book of Naval Reminiscences —but you know what sailors are!

A party of marines were rehearsing funeral drill on board ship, and the sergeant in charge was not satisfied that their performance reached that very high standard which the Royal Marines demand. Once more he put them through it:

'Corpse coming up the gangway: party, "Shun".'

He scratched his head in a puzzled way, then looked at his squad:

'Your uniform is right; your rifles is right, but it's your fices—they don't wear that expression of melancholy which the occasion demands an' the corpse 'as a right to expect.'

COFFEE SPRAYING

ADVISORY NOTE

At the Coffee Experiment Station, the blossom showers have not fallen at the time of writing (April 12th). How far this is general is uncertain, but it seems likely that many estates are still without blossom showers. This lateness will probably shorten the time available for spraying in the hot weather and will also mean that water may be short.

The lateness of the showers may be considered a factor unfavourable for leaf disease attacks and it is possible that some modifications in spraying programmes may be made without undue risk. The following note offers some suggestions which may assist planters in making the best use of the time and materials available.

On the basis of earlier work, the long period of drought experienced this year will act unfavourably on leaf disease (*Hemileia*) as it did last year. However, in many areas there is one big difference from 1939—the coffee carried a very heavy head of leaf through the dry months, and although some fall has occurred there is still much old leaf on the trees and a considerable proportion of it is lightly infected with old pustules of disease which will act as centres of fresh infection when conditions become favourable again.

This difference suggests that in spite of a drought but little shorter, to date, than that of last year, risks of disease attacks in a number of areas are greater than last year.

At the same time, there are certain to be numbers of areas where much old leaf has been lost, and on these areas the risks of early disease attacks are very slight. Judging from experience on several occasions in recent years, it seems safe, if not actually preferable to leave spraying such areas until the earliest opportunity after the worst rains of the S.-W. Monsoon. This usually means some time in August.

It must be clearly understood that this advice is at present limited to areas which have lost the greater part of their old leaf either as a result of last season's attack of disease or of heavy crop and to areas which have been pruned sufficiently heavily to have removed a substantial proportion of old leaf.

Areas with a heavy head of leaf and about to bear heavily should, as far as possible, be sprayed before the S.-W. Monsoon.

Where time, water or materials make some reduction in area sprayed essential, then it should be borne in mind that disease attacks are likely to be most severe in areas carrying a heavy crop especially if this is associated with a heavy carry over of leaf from last season, in areas sheltered from wind and other places where conditions are likely to be damp and also in areas where shade is light.

W. WILSON MAYNE,

12th April, 1940. *Coffee Scientific Officer.*

NATIONAL SERVICE FOR EUROPEANS

1. The National Service Advisory Committees were set up originally on a voluntary basis in order to serve as a liaison between the military authorities and the European community with respect to calling up of European British subjects, and to assist in reconciling military needs with those of industry and commerce. It was then expected that compulsory service for European British subjects would be introduced in the near future and that the necessary legislation would be prepared, which would give statutory recognition to these Committees. It was subsequently discovered that there were serious legal obstacles in the way of introducing into India compulsory military service for European British subjects, and therefore it was decided to prepare legislation which would give statutory recognition to the N.S.A. Committees, define their functions, make provision for reinstatement after the end of hostilities for European British subjects who undertake national service, while at the same time recognising that the whole system was on a voluntary basis.

2. A National Service Advisory Committee which is constituted under the Act is to consist of not less than four persons, one of whom is to be an officer of one of H.M. Forces in India, nominated by the District or Area Commander, and the other three of whom are to be European non-officials. The Committee can of course consist of more than four persons, and there is no limit to the number. It can also co-opt additional members, and thus can work through sub-committees. It elects its own Chairman and lays down its own rules for meetings. It has the powers of a Civil Court for certain purposes, but is an advisory committee, whose functions are to give advice on certain matters when consulted by the competent authority, to examine persons who appear before them as to their fitness and availability for national service, and to advise the Central Government in any matter which that Government may refer to it. The actual service of notices with regard to calling up for enquiry is in the hands of the military authorities (i.e. the District Commander).

3. No calling up notice can be served upon a person by the competent authority without previous consultation with the N.S.A. Committee. Until such a notice is served, N.S.A. Committees have no statutory power to require any particular information from the employer or any other person concerned, though of course there is nothing to prevent the Committee from making an informal approach with a request for information. At this stage, however, the person approached need not comply with this request, if he prefers not to do so.

4. The powers of a Civil Court which the N.S.A. Committee possesses are those which relate to receiving evidence, administering oaths, summoning witnesses, and compelling the discovery of documents. Moreover, any person who omits to produce a document when requested so to do, or refuses to take an oath or make an affirmation, or declines to answer the members of the N.S.A. Committee in the course of examination, or refuses to sign a statement, or intentionally interrupts or insults the members of the Committee when they are conducting their proceedings, is liable to be committed for contempt of court.

5. The duty of the N.S.A. Committee to report to the competent authority as to the 'fitness and availability' of any person upon whom a notice has been served, cannot be carried out until that notice is served.

Once that has been done, however, the Committee may require the attendance and receive the evidence of *any* person (i.e. including the employer) who is in a position to give relevant evidence in connection with the enquiry.

6. If the employer is summoned as a witness, his evidence is taken as to the fitness and availability of the employee on whom a notice has been served. After the necessary evidence has been taken it is for the N.S.A. Committee to form its own judgment as to fitness and availability, and forward its recommendations to the competent authority.

7. If the N.S.A. Committee finds that the employee is not 'fit and available', that closes the matter, unless and until a new calling up notice is served, in which case a new enquiry is conducted. If the N.S.A. Committee finds that the employee is 'fit and available', then it makes a report in that sense to the competent authority, who will then ask the employee in question to state whether he is or is not willing to undertake national service when called upon to do so. If the employee answers in the affirmative, then the competent authority may specify the particular capacity for which he is suitable.

8. It should be borne in mind that the employee is not precluded from accepting service, even though his employer has given evidence to the effect that he is not available. The N.S.A. Committee makes its recommendations after due consideration of the evidence which the employer (or any other person) has given. If the employee accepts service under those conditions, he will be protected as to reinstatement at the conclusion of hostilities under the provisions of Clause 8. Both employers and employees should realise that the provisions of Clause 8 apply to all persons who, having been reported by the N.S.A. Committee to the competent authority as fit and available for national service, have accepted some form of National Service.

9. As the basis of the scheme is voluntary service, the ultimate decision as to whether an employee who having been recommended as being fit and available for and having been offered some form of national service, undertakes such service, rests with the employee and with nobody else. If at that stage he indicates that he is not willing to undertake such national service, he cannot be compelled to do so.

10. Presumably in the normal course of procedure N.S.A. Committees would keep employers regularly advised of any recommendation which they have made to the competent authority concerning any of their employees who has been the subject of enquiry, though there is no specific provision to this effect in the Act.

11. Clause 8 is the reinstatement Clause and it applies to the following:—

(*a*) All persons who are taken into service on the advice of a National Service Advisory Committee;

(*b*) All those who have been called out for service after the 2nd of September 1939 and before the termination of hostilities in the reserve of H.M. regular, naval, military or Air Forces;

(*c*) All those who, with the consent of their employers, were between the 2nd of September 1939 and the coming into force of this

Act, granted emergency commissions or enlisted in H.M. armed forces or accepted for training as cadets at an officers' training school.

It is the duty of the employer of any or all such persons to reinstate his employee on his discharge from national service in conditions not less favourable than those which would have been applicable had he not been taken into service.

12. In order to provide for disputes, the Central Government has power to set up Tribunals for different parts of the country, each of which consists of three members, one of whom is to be a member of the Civil Service, not lower in status than a District or Sessions Judge (he is to be the Chairman), one a military officer not below the rank of Brigadier, and the other a European non-official who is not serving as a member of any National Service Advisory Committee. The Tribunal has the same powers of a Civil Court as has been granted to the N.S.A. Committees.

13. If the reinstatement of a person on the terms referred to in para 11 is found to be impracticable by the employer, either party may refer the matter to a Tribunal. The Tribunal can do one of three things:—(*a*) it can exempt the employer from the provisions of this section; (*b*) it can require the employer to re-employ his employee on such terms as it thinks suitable; (*c*) it can require the employer to pay to his employee compensation not exceeding an amount equal to six months' pay at the rate which the employee was drawing before he joined up. Any employer who fails to obey an order of the Tribunal may be punished by a Court, not inferior in rank to that of a Presidency Magistrate or a Magistrate of the First Class, to pay a fine up to a maximum of Rs. 1,000 and to pay a sum in compensation not exceeding six months' pay.

14. An employee who wishes to take advantage of the provisions of this section *must apply to his employer for reinstatement within a period of two months from his discharge* from national service, otherwise it will provide an employer with a defence against his application for reinstatement.

15. The Central Government will make rules under the Act for various matters including (*a*) the payment of travelling allowances to those who are called up for enquiry, for members and Secretaries of the N.S.A. Committee and for office expenses; (*b*) provision for the issue of letters or certificates to those who, though being fit for national service, have been classified by the N.S.A. Committee as not available on the ground that they are performing more valuable national service in some other capacity.

16. The Act does not apply to lunatics, prisoners, those under the age of 18 or those over the age of 50.

17. Provision is being made for travelling allowance for those who are called up or who are required to undergo medical examination and for members of the N.S.A. Committee who have to travel for the purpose of interviewing those upon whom calling up notices have been served. Travelling allowances will be at the following rates:—

(*a*) For train journeys—1½ first class fare.

(*b*) Halting allowance—the basic rate is Rs. 6 a day, but this in the case of Calcutta is to be Rs. 12, Bombay Rs. 8, and Madras Rs. 8.

(c) Journeys by car at the rate of 6 annas a mile. Journeys by car will only be authorised to the nearest railway station.

18. The rules will provide for the payment of the office expenses of an N.S.A. Committee, and the procedure will be that the Chairman will submit to the competent authority an estimate of expenditure for the year. On the basis of this the competent authority will, in consultation with the Controller of Military Accounts, authorise a budget, and expenditure actually incurred will be recovered on bills submitted to the Controller of Military Accounts as against the sanctioned allotment.

19. Under Section 4 (1) of the Act the calling up notice issued by the competent authority will require the person concerned to present himself for examination by the N.S.A. Committee at a certain place on a certain day. Under Section 5 (7) of the Act the N.S.A. Committee has power to order anyone on whom a calling up notice has been served to submit himself for examination by 'a medical officer of the armed forces'. This means an officer of the I.M.S., R.A.M.C., or I.M.D. In the case of persons who are living in districts remote from the headquarters of the N.S.A. Committee, that Committee may ask that the examination shall take place some time before they are required to attend the headquarters of the Committee for enquiry. The point of this is that if the N.S.A. Committee have reason to suppose from the evidence that is already before them in the shape of the registration form of the person concerned or otherwise that a person is likely to be found medically unfit, that person would be saved the trouble and the State would be saved the expense of his appearing before the N.S.A. Committee. It should be remembered that while the calling up notice is issued by the competent authority (i.e. the District or Area Commander) the order to submit to medical examination will be issued by the N.S.A. Committee.

20. The rules will also make provision for the issue by the competent authority on the recommendation of the N.S.A. Committee of letters to persons who (a) have been examined by the N.S.A. Committee but have been found by that Committee not to be available; and (b) who being occupied in key positions but otherwise suitable for military service, desire to obtain such a letter. The letter would state that the person concerned, though desirous of submitting himself for military training (and in the case of (a) having undergone examination by the N.S.A. Committee) was not allowed so to offer himself, as he was performing valuable national service in some other capacity. This letter, as it would be issued by the military authority of the District, would carry considerable weight.

21. The rules will provide that those who are examined by the N.S.A. Committee will be informed by the competent authority of the nature of the recommendation it makes, i.e. as to whether the Committee has come to the conclusion that they are available or not available as the case may be.

F. E. J.

LABOUR DEPARTMENT, U. P. A. S. I.

With reference to the Notice of the Labour Department in our issue of 19th April, we are asked to say that for 'Vasudevanallur' there should be substituted the name 'Puliangudi' in the third paragraph.

DISTRICT NOTES

MYSORE

Proceedings of the Seventy-sixth Annual Ordinary General Meeting of the Mysore Planters' Association (Incorporated), held at the Kadur Club, Chikmagalur, on Thursday, 21st March 1940.

Present.

Messrs. A. Middleton (*Chairman*), J. H. Alexander, H. Browne, A. F. A. Burnett, C. C. Couchman, M. D'Souza, H. H. English, R. G. Foster, G. V. R. Frend, F. J. Graham, G. S. Homewood, St. John Hunt, L. P. Kent, N. Kirwan, R. C. Lake, J. S. H. Morgan, M.C., H. S. Northey, P. T. Plunkett, F. A. G. Ratcliffe, W. H. Reed, K. T. Seshaiya, B.A., LL.B., V. L. Travers-Drapes and A. L. Hill (*Secretary*).

Visitors.—Messrs. W. W. Mayne and R. Venn.

The Chairman asked all present to stand and referred to the sad death of His Highness the Yuvaraja of Mysore. He had written to the Private Secretary to His Highness the Maharaja and received a letter of acknowledgment. They read as follows:—

15th March 1940.

The Private Secretary to H.H. The Maharaja of Mysore, Mysore.

Dear Sir,

On behalf of the members of the Mysore Planters' Association I write to express our deep sorrow at the death of H.H. The Yuvaraja, and request you to be so good as to convey our respectful condolences to H.H. The Maharaja and the Royal Family.

Yours sincerely,
A. MIDDLETON,
Chairman, M.P.A.

C. 1524.

The Palace,
Mysore, 18th March, 1940.

My dear Middleton,

I am desired by His Highness The Maharaja to thank you, and through you, the members of the Mysore Planters' Association, for the kind message of condolence to His Highness and the members of his family which you have communicated in your letter of the 15th instant.

Yours sincerely,
C. S. TODHUNTER.

The Chairman read a letter from Mr. Gallaher regretting his inability to attend the meeting.

Confirmation of Minutes.—The Secretary regretted that he had to report an error in the Minutes of the last meeting pointed out by the Chairman of the Coffee Section. The latter asked that under 'Coffee Scientific Department' the words 'and that therefore the question of the Coffee Scientific Officer undertaking Tea Scientific work no longer arose' should be altered to 'and that therefore for the time being the question of the Coffee Scientific Officer undertaking Tea Scientific work no longer arose'. The meeting agreed to this correction being made and then to the Minutes being confirmed.

The Chairman then read a letter from Mr. M. A. de Weck thanking the members of the Association for their letter of condolence.

REPORT OF THE EXECUTIVE COMMITTEE FOR THE YEAR 1939

The Chairman said that the report had been sent to all members and suggested that it be taken as read, and adopted. This was unanimously agreed to. The report reads as follows:—

Personnel.—Mr. Young having regretted his inability to undertake Active Membership of the Executive Committee for South Mysore Mr. N. Kirwan was invited to do so and very kindly agreed. There have been no other changes in the Executive Committee since the Annual General Meeting on 24th March.

Meetings.—During 1939 an Annual General and three Quarterly General Meetings were held. The average attendance at the four meetings was 15, the highest being 19 and the lowest 12. The average number of proxies received was one. The Executive Committee has met once during the year. A meeting was convened on January 20th to meet Mr. J. Wheeler Williams, late of Messrs. Quick Reek & Smith Ltd., London, at which forty-four European and Indian Planters were present.

Membership and acreage.—The total number of estates subscribing to the Association at the beginning of the year was:—

	Estates	*Tea*	*Coffee*	*M. Prods*	*Total*
As on 1-1-1939	74	2,684	16,813	1,105	20,602
Add: New Members joined from 21-1-1939	2	...	306	8	314
	76	2,684	17,119	1,113	20,916
Less: Resigned as from 31-12-1939	1	2	266	170	438
	75	2,682	16,853	943	20,478
Add: Increase in acreage from six estates as from 1-1-1940	...	...	50	3	53
Two Members' Estates subscribing from 1-1-1940 ...	2	...	233	10	243
Acreage subscribing on 1st January 1940 ...	77	2,682	17,136	956	20,774
Increase during the year ...	4	...	589	21	610
Decrease during the year ...	1	2	266	170	438
Nett Increase ...	3	...	323	...	172
Nett Decrease ...	...	2	...	149	...

The number of Personal Members fell from 5 to 4 owing to the resignation of one member.

Subscriptions.—The rate of subscription remained at two annas per acre per annum and all members paid their subscriptions in full.

The Association's subscriptions to the U.P.A.S.I., and to the S.I.P.B. Fund, Rs. 75, have been paid.

A sum of Rs. 240 in twelve monthly instalments of Rs. 20 each have been received from a former member against his arrears of subscription. The balance outstanding at the beginning of 1940 was Rs. 232-12-0. This is now the only outstanding subscription.

Finance.—At the beginning of the year the cash resources of the Association apart from investments amounted to Rs. 1,809-14-5 and at the end of the year to Rs. 1,024-1-8.

A sum of Rs. 1,209-11-0 was put on fixed deposit during the year bringing the total amount on fixed deposit account with the Bank of Mysore Ltd., to:—

On General Account	Rs. 4,800	0	0
On Hassan Goods Shed Account ...	,, 455	5	0

The budget for 1940 was passed. The rate of subscription remaining at two annas per acre per annum.

It is proposed to put another Rs. 500 on fixed deposit.

Revision of Articles of Association.—This matter has not yet been disposed of but it is hoped that it will be shortly.

Constitutional Reforms in Mysore.—The Association's request for a seat in the Legislative Council as well as in the Representative Assembly has been granted by Government. The Association has asked that it be made the constituency for both these seats.

Coffee Husk.—All members of the Mangalore Curers' Association have agreed to destroy or render unfit for human consumption before sale all cherry husk whether heavy, medium or light, in their possession. The Coorg Government passed legislation similar to the original Mysore Bill. The Mysore Bill was amended by a Select Committee so that it was considerably weakened. The Association's representations to Government, although not accepted in full, resulted in the Bill being again somewhat strengthened. (The Bill was passed into Law in January 1940.)

Correspondence.—The total number of despatches from the Association's Office, apart from papers forwarded for other bodies for the year was 6,790 giving an average of 19 per day.

Seventy-fifth Anniversary.—1939 was the Seventy-fifth Anniversary of the founding of the Association and it is now in a stronger position than at any time during its history.

A. MIDDLETON *Chairman.*
N. KIRWAN,
W. H. REED, } *Members.*
J. H. ALEXANDER.

The Chairman's Address.—The Chairman addressed the meeting as follows:—

'Gentlemen,

The next item on the agenda is the Chairman's address, in which it is customary to give a brief account of the main events of the year, and I shall try and make it as brief as possible.

The year opened with the Seventy-fifth Anniversary of the Association, a most successful and largely attended meeting, and I trust that the Association, which is now in a sound position, may increase in strength and usefulness as it grows older.

The most momentous event of the year was of course the Declaration of War, which has rather unexpectedly affected us much less than we anticipated, and very few planters have so far been called up, space for Home shipments is available, and prices have improved, and if the present conditions can be maintained, the coffee planters' prospects are on the up-grade.

With Government taking control of the tea market the Tea Planters' position is assured, and they can reckon on a fair price for their tea.

Seasonal conditions were unusual, and a period of drought and a light monsoon were only relieved by good North-East showers, and crops have turned out under estimate, which has helped the rise in prices, and also cardamoms suffered severely.

The Mysore Government has shown its interest in planting matters by first appointing a Committee to investigate means for ameliorating the indebtedness of coffee planters, and later appointed another Committee for the resuscitation of the cardamom industry, but these have not yet made any recommendations to Government.

The Takkavi Loan Scheme has been extended for another year, and funds allotted, and Government have taken great interest in the Mysore Coffee Curing Works recently opened in Chikmagalur, and already attracting South Indian buyers.

The Control of Coffee Husk Act became law last month, but unfortunately does not come into force until 1st April, so a good deal of this season's husk has already been transported to Mangalore.

Under the Constitutional Reforms Europeans have been granted increased representation, and our Secretary kindly undertook to give evidence before the Delimitation Committee on behalf of the Association.

The new Game Laws came into force early in December, but though we benefit by a reduced licence fee, I am afraid Game will not, unless Government is prepared to increase the Forest Department Staff to enforce the laws.

You will have all received the U.P.A.S.I. Chairman's appeal for contributions to the U.P.A.S.I. War Fund, and also the appeal for gifts of coffee for the Canadian Troops in France, and I feel sure that all members will contribute to these to the best of their ability.

Thanking you for the honour you did me in electing me Chairman, and asking you to forgive any shortcomings on my part, I now tender you my resignation. (*Applause.*)

Accounts for the year 1939.—The Chairman said that the Audited Accounts for 1939 had been sent to all members and invited questions. None were raised. He added that the Executive Committee had had Rs. 500 more placed on fixed deposit. He then read the Auditors' Report and proposed 'That the Audited Accounts for 1939 be passed'. This was agreed to unanimously.

Election of Auditors for 1940.—It was proposed from the Chair and carried unanimously 'That Messrs. Fraser & Ross be re-elected Auditors of the Association for 1940 on the same remuneration as heretofore'.

REPORT OF THE EXECUTIVE COMMITTEE FOR THE PERIOD 1st DECEMBER 1939 to 29th FEBRUARY 1940

The Chairman said that the draft report had been sent to all members of the Association and that as there were no alterations to the draft it became the report and proposed that it be adopted. This was unanimously agreed to.

The report reads as follows:—

Meetings.—A Quarterly Extraordinary General Meeting was held on 15th December 1939.

References.—Fifty-one references and circulars have been sent to the Executive Committee of which forty-four have been dealt with and seven remain to be finally disposed of.

S.I.P.B. Fund.—The Committee has recommended the continuation of grants for six months to two nominees of this Association.

One nominee reported that he was no longer in need of assistance and thanked the Fund for the help it had given him.

Mysore Prevention of Adulteration Act.—Government has applied the Rules prohibiting the adulteration of coffee to Saklaspur Municipality.

Roads.—The Chairman and Secretary were granted an interview by the Dewan at Saklaspur on 29th December and spoke about the 25% cuts in the Hassan and Kadur District Boards upkeep grants, about various roads in an unsatisfactory state, camber and banking, the time at which drains are cleaned out, the Hirisave-Marnahalli Road and the Kadur-Charmady Road, the small wooden posts appearing on roads in the Kadur Division, encouragement of pneumatic tyred bullock carts, inadequate consolidation of repairs, and the extension of the proposed tarring of the main road through Saklaspur. They were given a patient hearing and were assured that the grants of lump-sum contractors in the Hassan and Kadur Districts would not be cut, that the various points about unsatisfactory repairs, camber, drains, encouragement of pneumatic tyred bullock carts and so forth would be noted, that it was Government's intention to improve the State Fund Roads and eventually to tar the Kadur-Charmady Road, that Diesel engined rollers which could be used on the Saklaspur-Mannahalli Road were on order and that the tarring of the main road through Saklaspur would be extended from the Travellers' Bungalow to the end of the Wetherall Park.

The state of the Joladalu-Thornamavu Road was brought to the attention of the President, Kadur District Board, and the Executive Engineer, Kadur Division, and both have stated that repairs will be done.

Delimitation Committee.—The Secretary appeared before the Delimitation Committee on January 16th and asked that the Association should be the constituency for the European Planting seats in the Legislative Council and the Representative Assembly. The Delimitation Committee was frankly opposed to Associations as constituencies, and the result of the Association's written and verbal representations is not yet known.

Cardamom Scientific Research.—The U.P.A.S.I. in January asked District Associations to nominate members to a special *ad hoc* Sub-Committee to deal with cardamom research until the time of the U.P.A.S.I. Annual General Meeting. Mr. L. G. Gallaher was asked to represent this Association and kindly agreed to do so.

Subscriptions 1940.—Twenty-three members paid their subscriptions on demand and eleven after the first reminder, leaving nine who have not yet paid.

S.I.P.B.F. subscriptions for 1940-41.—Seventeen members have paid their subscriptions for 1940-41 in advance.

Circulars.—Twelve circulars have been sent to all members dealing with the draft report of the Executive Committee for September-November 1939, budget for 1940, British Indian income-tax, small change required by estates, Government holidays, shipping space for coffee, gifts of coffee for Canadian Troops in France, notice calling the Annual General Meeting and agenda, audited accounts for 1939 and elections to the Hassan and the Kadur District Boards, and seven circulars dealing with the maximum prices of commodities, introduction of the scheme of debt conciliation into Chikmagalur and Mudigere Taluks, small change in Treasuries, Planters and Military Service, and free shooting of tigers round Arehalli, to those interested.

A. MIDDLETON *Chairman.*
N. KIRWAN, } *Members.*
W. H. REED. }

Business arising out of the Report.—

Cardamom Scientific Research.—Mr. Plunkett, speaking for Mr. Gallaher, said that the matter would have to be postponed until further action by the Imperial Council of Agricultural Research.

Mr. Mayne said that the Advisory Committee of the Imperial Council of Agricultural Research had recommended the scheme but that its financing had to go before the next meeting of the Governing Body of the I.C.A.R. and this was not expected until late in May.

Payment of subscriptions.—The Chairman appealed to the four members who had not paid their subscriptions for 1940 to do so without delay, and at the request of several members their names were read. One of them was present and referred to correspondence he had had with the Secretary asking that his estate's financial year should be taken into consideration and the payment of his subscription therefore postponed for three months every year. The Secretary pointed out that it was impracticable for the Association to take into consideration any financial year other than its own and pointed out the advantage to the Association of prompt payments of subscriptions. The member who raised the question, while not agreeing with the Secretary, did not wish to press the point and paid his subscription on the spot.

REPORT OF MEMBERS, THE LEGISLATIVE COUNCIL AND THE REPRESENTATIVE ASSEMBLY

(*a*) *The Legislative Council.*—The Secretary read a letter from Mr. Morris and his report on the January Session of the Legislative Council.

The Chairman proposed a very hearty vote of thanks to Mr. R. C. Morris for his work on the Legislative Council. This was carried with applause.

(*b*) *The Representative Assembly.*—Mr. Middleton said that there had been no session of the Representative Assembly since the last meeting of the Association.

REPORT OF MEMBERS, THE HASSAN AND KADUR DISTRICT BOARDS

Kadur District Board.—The Secretary read Mr. Homewood's report on the last meeting of the District Board.

Mr. Homewood informed the meeting that the Kadur District Board proposed to reduce the railway cess from six pies to three pies and to impose a special general purposes cess of three pies for meeting deficits. These proposals were to be discussed at the next meeting of the Board.

A vote of thanks to Mr. Homewood was proposed from the Chair and carried.

Hassan District Board.—The Secretary said that no report had been received from the Association's Member.

The Southern India Planters' Benevolent Fund.—The Secretary explained that this item had been included in the agenda because he had expected a particular matter to require attention. This matter was however not yet ready for discussion and so there was for the present no business under this item.

Mr. Plunkett drew attention to Mr. Bayzand's letter in *The Planters' Chronicle* and asked about the rule governing assistance to non-subscribers to the Fund. No. 22 of the Fund's Rules was read.

Revision of Articles of Association.—The Secretary regretted that it was once again desirable to postpone the revision of the Articles this time because Government's Orders of the Report of the Delimitation Committee had not been received and that these Orders would affect the composition of the Association's Executive Committee. The meeting agreed that the Government Order in question should be awaited.

Coffee Husk.—The Secretary reported that the Mysore Coffee Husk Control Act would come into force on 1st April 1940 and that meanwhile coffee husk was said to be leaving Chikmagalur for Mangalore by lorry loads. It was a pity that the Act would be too late for most of the current crop.

Planters and Military Service.—In answer to the U.P.A.S.I.'s circular sent to all employers the following letter from Messrs. Peirce, Leslie & Co., Ltd., Calicut, was received:—

Calicut, 27th December 1939.

The Secretary, Mysore Planters' Association,
Belur-Hassan P.O., Mysore State.

Dear Sir,

We beg to acknowledge receipt of your No. 33/101/991-6561 dated 20th December.

We are glad to have this opportunity of informing your Association of the conditions which we have now adopted in the case of any planters employed by us, or by any Company with which we are connected, in the event of their being called up for war service. These conditions are, briefly, as follows:—

(1) The job is held open so that the individual can return to it on demobilisation.

(2) The individual on return to his employment will suffer no loss in pay or seniority.

(3) The Company concerned will supplement the service pay of the individual to the extent of Rs. 100 per month in the case of unmarried men and Rs. 150 per month in the case of married men.

(4) Where a Provident Fund exists, and in most cases it does, the Company will pay monthly the full contribution which is at present being paid by the individual and will also of course continue to pay the full Company's contribution.

We trust that your Association will agree that these conditions are reasonable and we may say that they have been fully approved by those concerned.

We are taking the liberty of sending a copy of this letter to the Coorg Planters' Association as being similarly interested.

Yours faithfully,
For PEIRCE, LESLIE & CO., LTD.,
(Sd.)
General Manager.

After discussion 'In Committee' the meeting instructed the Secretary to protest against any proceedings of the National Service Advisory Committee, Madras, being kept confidential.

Price of Quinine.—The answer of the Law Secretary to the Mysore Government to the Association's request for some control of the price of quinine was read, as follows:—

Government of His Highness The Maharaja of Mysore,
General and Revenue Secretariat,
No. 4055. Bangalore, Dated 14th February 1940.

From

The Secretary to the Government of His Highness The Maharaja of Mysore,
Law Department.

To

The Secretary,
Mysore Planters' Association, Belur-Hassan P.O.

Sir,

With reference to your letter No. 11/105-405 dated 3rd February 1940, I am directed to inform you that the present price of quinine has gone up by about 50 or 60 per cent over the pre-war figures and this is not caused by local undue inflation but due to increase of prices at Bombay and Madras from which places local stockists obtain their supplies. Quinine supply being in large part from foreign countries, increased freightage, insurance as well as increase in cost put up by producers, unfavourable exchange have all contributed to the increase.

Unless there is good evidence of undue profiteering by local merchants, I am to state that this Government can do nothing in the matter under the present laws.

I have the honour to be,
Sir,
Your most obedient servant,
(Sd.) M. K. Varadarajan,
For Secretary to Government,
Law Department.

It was decided that the matter should be taken up with the U.P.A.S.I. with a view to action by the Central Government. Mr. Kirwan kindly agreed to do this at the forthcoming U.P.A.S.I. meeting and the Secretary was instructed to provide him with the relevant papers. Mr. Mayne kindly agreed to let Mr. Kirwan have a copy of a recent article on the production of quinine in Java which went to show that the rise in price of quinine was not justified.

Planting Cinchona.—Mr. Plunkett said that on their visit to Kadame in December the Dewan and the Senior Surgeon had both seemed very interested in and keen on the cultivation of cinchona in the State with a view to making Mysore independent of imported supplies. It was up to the Association to put proposals before Government. The Secretary said that the U.P.A.S.I. had gone into the question thoroughly and made proposals, of which the essential one was a guaranteed market for the bark when it was produced after the inevitably long time required to grow it. The Madras Government had offered help in every direction but that.

Mr. Mayne said that the question had been discussed by the Coffee Advisory Committee and the idea was to get landholders to plant a few cinchona trees here and there so that the supply of bark would in the aggregate be considerable though run as a cottage and not as a plantation industry.

The Chairman asked if all members present would be willing to try a few cinchona plants if they were supplied with them and all those present were willing to do so. It was decided to appoint an *ad hoc* Committee to investigate the matter, the members to be Mr. A. Middleton, Mr. W .W. Mayne, and a member from Kadamane Estates.

Labour Department.—The present guarantee of subscriptions to the U.P.A.S.I. Labour Department will expire at the end of March 1941 and the Control Committee was enquiring what support for the Department could be expected for 1941-44, as it was most desirable to know well in advance what the prospects were. Members present were asked if they intended to subscribe to the Labour Department for 1941-44 at not more than the present rates of subscription. Members representing 1,120 acres Tea, 3,421 acres of Coffee and 690 acres of Minor Products said that they did so intend.

Mr. Kirwan kindly agreed to attend the forthcoming Labour Department meeting and indicate the views of members of the Association present at this meeting.

Constitutional Reforms.—The Secretary reported that he had appeared before the Delimitation Committee in January and asked that the Association should be the constituency for the European Planting Seats in the Legislative Council and the Representative Assembly. He had been disconcerted to find that the Committee was quite frankly against Associations in general as constituencies, an attitude he had not expected. He had done what he could to put the Association's case and the Committee had listened patiently, but he did not know what their recommendations were likely to be. He believed that Government's Orders on the Committee's recommendations were due almost at once.

Any other matters of importance.—

(*a*) A vote of thanks to Messrs. Peirce, Leslie & Co., Ltd., Mangalore, and Messrs. T. Stanes & Co., Ltd., Coimbatore, for their contributions paying the ground rent of the Hassan Goods Shed for 1940 was passed unanimously.

(*b*) *Gifts of coffee for the Canadian Troops in France.*—The Executive Committee had sanctioned a contribution of Rs. 50 to the Indian Coffee Cess Committee's Fund for gifts of coffee to the Canadian Troops in France and it was a question whether this amount should be increased.

On the proposal of Mr. Ratcliffe it was decided, by a majority of 8 to 2, that the subscription should be increased to Rs. 100.

(*c*) *Pyrethrum cultivation.*—The Secretary said that anyone interested in Pyrethrum cultivation could obtain help from the Director of Agriculture, Madras, through the U.P.A.S.I. and that details could be obtained from his office.

(*d*) *Taccavi Loans.*—Recorded that Government had sanctioned the continuation of Taccavi Loans to coffee planters for 1940-41 and would provide Rs. 1,50,000 for that purpose. A further Rs. 15,000 had been sanctioned for the remainder of the current year.

(*e*) *The South Indian Railway Advisory Committee.*—Suggestions for subjects to be brought before the May meeting of the South Indian Railway Advisory Committee were invited, but none were forthcoming.

Election of Office-Bearers.—The following were elected:—

Chairman.—Mr. A. Middleton was re-elected. He thanked members and said that he would do his best for the Association.

Executive Committee.—

	Active Member	*Member-in-Waiting*
South Mysore ...	Mr. R. C. Lake	Mr. E. H. Young
North Mysore ...	Mr. H. Browne	Mr. W. H. Reed
Bababudins ...	Mr. J. H. Alexander	Mr. J. S. H. Morgan, M.C.

Election of Members on the Governing Body, The Sanderson Memorial Ward.—Messrs. St. John Hunt and A. Middleton were re-elected.

Election of Members on the Advisory Committee, The Coorg and Mysore Military area.—Messrs. H. H. English and F. A. G. Ratcliffe were elected.

Date of next meeting.—This was fixed for Friday, 28th June 1940.

The Chairman proposed a vote of thanks to the members of the Kadur Club for the use of the Club room.

A. MIDDLETON,
Chairman.

A. L. HILL,
Secretary.

PYRETHRUM BREEDING: A PROGRESS REPORT

By H. C. Thorpe, B.Sc. (Hons.), A.R.C.S., A.I.C.T.A., Plant Breeder, Kenya Colony.

In order to obtain the maximum efficiency from a field of pyrethrum it is necessary to plant intrinsically good material. In this connection, a considerable amount of work is being carried out by the Plant Breeding Services at Njoro on the selection and breeding of high yielding strains of good toxic qualities. Before, however, attempting the synthesis of high test types, it is necessary to determine whether pyrethrin content is a factor that is inherited or whether it is controlled entirely by environment, fluctuating according to, say, rainfall and altitude. If the latter is found to be the case the selection and building up of high content lines will be impossible: breeding work can then do no more than accomplish the production, valuable though this would be, of high yielding strains with desirable agronomic characteristics of large flowers, and longevity. The toxicity of such plants would then depend, in a given season, on the environment in which they were growing. But, if toxicity is just as much part and parcel of a plant as is a particular type of flower or a certain habit of growth, then the possibility of isolating or synthesizing high pyrethrin strains falls within the scope of the plant breeder.

PYRETHRIN CONTENT

It is already known that pyrethrin content is influenced by many factors under the farmer's direct control, such as regular picking and efficient drying. The toxic content may also be dependent on the altitude at which the plants are grown, although in Kenya this fact has yet to be proved. There also seems to be evidence that the first flush of flowers in the season is highest in pyrethrin and that the content drops as the season advances. But it soon becomes necessary in any breeding programme aimed at improving toxicity, to ascertain how far pyrethrin content is dependent on these factors and how far it is a factor in itself.

In a preliminary investigation into factors affecting pyrethrin content, Gnadinger, Evans and Corl (1933) found a wide range in the yield of flowers and pyrethrins from individual plants, the latter ranging from 0.90 per cent to 2.07 per cent, with an average of 1.27 per cent for all plants studied.

Drain and Shuey (1934) found great variation within and between groups of seedlings of material from Dalmatia, France, Japan, etc., for such characters as height, time of blossoming, tendency to lodge and size of flowers. These observations, and some analyses made by them, suggested the possibility of the isolation of superior commercial strains. A single plant analysing high in pyrethrins was vegetatively propagated and the air-dried blossoms of its progeny showed a high toxic content. The authors emphasise the importance of high pyrethrin content, as well as superior plant characters, in any selections made to improve the crop. Such selections can be propagated vegetatively to reduce to a minimum variation within the strain.

Drain, Gnadinger, Corl and Shuey (1936) have published data to show that high-test strains remain so during three vegetative generations. They also found that within a given strain, pyrethrin content remained quite constant. Their evidence demonstrates the value of highest pyrethrin strains. If such strains are kept free from mixture with low-test plants, such as volunteers and sports, high-test should continue and remain high-test although, they point out, environment will play a part in determining pyrethrin content.

The stage at which flowers are picked has been shown by Gnadinger and Corl (1930) to exert a very great influence on their toxicity; open flowers from commercial samples contained 18 per cent to 61 per cent more active principle than closed flowers from the same lots. Since the weight of open flowers is about double that of closed flowers it follows that the pyrethrins produced from a given area of land can be increased three to four times merely by allowing the flowers to mature. Developing fruits were found to contain more than 90 per cent of the active material, the receptacles and involucral scales accounting for most of the remainder. It is therefore apparent that fertilisation of the florets is an important factor.

In a later publication Gnadinger, Evans and Corl (1936) found 'a considerable variation in the number and weight of flowers, and a wide variation in the pyrethrin content of flowers produced by individual plants during the same year and from year to year'. Progeny lines from high-test mother plants were found to give slightly higher pyrethrin contents than those grown from common seed stock. Evidence was also found of a close relationship between pyrethrin content and temperature during the growing season. Where mean monthly temperature was high, the pyrethrin content was low; in cooler climates the pyrethrin content was higher.

Martin and Tattersfield (1934), on the other hand, state that a given plant yielded flowers containing approximately the same percentage of pyrethrin I for three successive years, whilst the yield of total pyrethrins of flowers from eight individual plants was the same for each plant over successive harvests.

The results so far obtained in Kenya support the idea that pyrethrin content is an inherited character. It seems probable that high-test pyrethrin strains will remain high-test under whatever conditions they are grown, though environment may cause fluctuations in the content of active principle, and the offspring will be mixed, owing to the hybridity of the parents.

SELF-INCOMPATIBILITY

If flowers or plants of pyrethrum are enclosed so as to exclude foreign pollen it is found that no seed capable of germination is produced. Even if flowers are artificially pollinated with their own pollen or that from other flowers on the same plant, the result is the same. This failure to form seed on selfing, or self sterility, renders it impossible to 'fix' a pure breeding line of pyrethrum and considerably complicates the breeding programme. Pyrethrum is thus a heterogeneous collection of types varying in botanical characters as well as in toxic qualities, and it will remain so on account of continued and enforced cross-pollination.

Out of this miscellany, it should be possible to choose plants having desirable morphological characters yet possessing pyrethrin contents higher than the average. Once such plants are obtained, they will have to be perpetuated by root division since it has been shown that seedlings from high-test open pollinated plants tend to be lower in toxicity on the average than their female parents. Again, such plants can be crossed with others also of high toxic quality and the progeny examined individually for pyrethrin content. It is also possible that plants higher in toxic value than either parent may be numbered in the progeny of the cross. If this transgressive type of segregation occurs in pyrethrum a search will have to be made among the segregates in the cross for high-content types. This will entail numerous analyses. In fact in all breeding work with pyrethrum chemical analysis is required, since no correlation of any morphological character with toxic content has been found, and analysis is the only means of arriving at a measure of the active principle. Finally, plants of high toxicity but possessing bad characters from the farmer's view-point may be used as parents in the hope of conferring their high pyrethrin content upon progeny from better type plants.

EXPERIMENTAL WORK IN PROGRESS

I—Selection Work

Breeding studies with pyrethrum were started by the Senior Plant Breeder in 1935 and 1936 by the selection of some fifty single plants from a field of a commercial crop. Selection was based on free-flowering characteristics combined with larger flowers and a desirable habit of growth. Analysis of flowers from splits of these plants showed in 1937 a range of from 1.06 per cent up to 1.80 per cent pyrethrins, the average being 1.36 per cent for the thirty single plants analysed. The remaining twenty selections were discarded on account of poor growth. Since then, further single-plant selections have been made, and the highest figure so far obtained is 2.44 per cent pyrethrins from carefully picked and dried material obtained from the 9,100 feet level. Two other high-content lines picked under the same conditions analysed 2.22 per cent and 2.34 per cent pyrethrins. This highly toxic material is being increased and limited quantities will be available for issue to farmers in 1940.

II—Crossing of High-Test Strains

Crossing was attempted between high-test strains by the isolation of the two parents under muslin cages, but no seed capable of germination was produced. This led to the planting of the two parents together in small plots situated sufficiently far from neighbouring pyrethrum to be deemed safe from foreign pollen. Viable seed was produced and the seedlings resulting from the cross are now being further studied. Those showing promise in possessing larger flowers, better growth and a free flowering habit have been split up and are now being analysed for pyrethrin content. By this means it is expected that lines of high toxicity will be built up, possessing also other desirable cultured characters. At Molo, a high altitude station of 9,100 feet, where this work has already been started, promising seedlings of a cross between high-test strains have been selected and split for analyses.

The work on single-plant selection is being continued since it is the first step in the building up of high-content lines. It is desirable to have as many high-test lines as possible in order to select amongst them for other characters, and there is still the chance of discovering plants of higher toxicity than those already isolated. A further large batch of plants has been selected and has been planted at Njoro, 7,100 feet, for observation and analysis. There are several new plantations of pyrethrum in the Njoro district, and there will be opportunity, in co-operation with farmers, of visiting these fields and selecting further early free-flowering types of plants. Strains of high toxic value and of a completely free-flowering habit will thus become available for the lower altitudes, where considerable trouble is at present being experienced on account of the occurrence of a varying proportion of late-flowering or non-flowering plants.

INDUCTION OF POLYPLOIDY

Polyploidy may be defined as the increase in the number of chromosomes or heredity-bearing particles within the cells. Such increase is frequently followed by increase in the size of the plant as a whole, as well as of its component parts. Most of the cultivated garden plants are polyploids, derived chiefly by accident rather than design from their common wild and less showy prototypes. The Dahlia is a noteworthy example.

Polyploidy has been and still is a valuable weapon in the hands of the breeder and hybridist, and great advances have in the past been made possible by the use of polyploid parents. The chief interest from a practical point of view lies in the increased size and range of colour and form that is rendered possible and, more especially for the plant breeder, in the production of fully fertile hybrids from sterile species crosses.

Polyploidy cannot be induced at will. It occurs naturally in plant species to an extremely limited extent, but such spasmodic and infrequent natural occurrences are of little use in any breeding programme designed to yield results in the shortest possible time. It is not surprising, therefore, that numerous attempts have been made to bring it under definite control ever since its potentialities in breeding work have been recognised.

Of the numerous artificial methods tried, such as subjection of plants to extremes of temperature, X-rays and other types of radiation, etc. (usually with very indifferent success), perhaps the most promising is the recently discovered treatment with the alkaloid colchicine. Plants vary in their sensitivity to this drug, but from the limited number of experiments so far carried out, it would appear that the method is likely to be of more value than those so far tried.

Chromosome multiplication in fully fertile plants leads, almost invariably, to a decrease in fertility. In plants in which self-sterility is caused by incompatibility factors, as may be the case in pyrethrum, it may be expected, although it would not necessarily follow that the polyploid plants would also be self-sterile. In garden plants or in others in which propagation may, and usually does, take the form of root division or other vegetative means, self-sterility is of little practical consequence. But in plants in which the development of some active principle is dependent upon full fertility, or in which interest centres in the fruit or seed, maintenance of fertility is of paramount importance.

What then is likely to be the effect of polyploidy in pyrethrum? Here we are concerned not only with an increase in flower size and with other morphological characters, important though these are in the production of commercial strains, but, most important of all, with the content of pyrethrins. The pyrethrins, being formed chiefly in the achenes or fruits depend for their maximum development upon full fertility and efficient seed setting. It is absolutely essential, therefore, to maintain fertility at a maximum so that the greatest content of toxic principles may be obtained. For this reason, the production of polyploid pyrethrum strains, whilst probably leading to an increase in flower size, may also be followed by decreased fertility and a lowered pyrethrin content. On the other hand if, owing to a new chromosome balance, self-fertility is restored the production of high-test strains by in-breeding and selection will be made possible.

It is only by actual experiment that the value of polyploidy in breeding work may be determined. Preliminary tests at Njoro have already demonstrated the possibilities of the colchicine treatment, since great variation is apparent between treated and untreated seedlings.

—*East African Agricultural Journal.*

INDIAN RUBBER LICENSING COMMITTEE

ANNOUNCEMENT

The attention of the motoring public in India is drawn to section 2 (*h*) iii and section 20 (1) and (2) of the Indian Rubber Control Act 1934 amended todate and they are hereby informed that Indian manufactured motor car tyres and tubes attached to motor cars intended for export from India will have to be accompanied with necessary export licenses and certificates of origin issued by the Indian Rubber Licensing Committee in respect of the actual dry rubber contents of such tyres and tubes. In urgent cases the Committee is agreeable to arrange for the purchase of export quota rights and the issue of necessary export licenses and certificates of origin on payment of the cost of export quota rights at current market rates, and the prescribed fee of Three annas per 100 pounds during the year 1940.

(By Order)

P. KURIAN JOHN,
Rubber Export Controller for India.

RUBBER CONTROL OFFICE,
MALANKARA BUILDINGS,
KOTTAYAM, TRAVANCORE.
3rd April, 1940.

RUBBER FROM TOMATOES

The attention of British rubber trade interests is being drawn, during the course of the war, to the experiments of Dr. Mauri, of Parma, who has perfected a process by which, it is claimed, first class rubber can be manufactured from tomato skins. Fruit trade interests interviewed on this matter indicate that, while there would be difficulty in getting supplies of waste skins from household consumers, there is a definite supply available in large bulk from commercial users of tomatoes. It is indicated that from the 800,000 tons of tomatoes produced per annum in Italy, some 2,000 tons of rubber could be manufactured.

Fruit trade interests point out that there is a great waste of tomato skins at the moment, and urge that in the national interest, when transport and raw materials are so valuable, some effort be made to avoid the continuation of this wastage.

Whether the rubber industry would accept this source of raw material, and whether it could be treated at a price to compete with normal sources remains to be investigated, but the idea certainly seems to have some virtue and to be worth a little investigation.

—*The Rubber Age.*

SOUTH INDIAN TEA RE-EXPORTED FROM CEYLON

During the month of March, 1940

Destination	*Lbs.*
United States of America	301,979
Continent	37,402
Australia	118,305
Canada	96,309
Other Countries	78,440
Total	632,435

TEAS ADMITTED INTO THE U. S. A.—COMPARATIVE FOR SIX MONTHS TO DECEMBER 31st 1939

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Black Teas—										
Regulating Teas ...										
India ...	9,885,364	9,458,048	10,624,650	8,279,331	6,542,555	5,528,530	6,333,151	5,464,969	6,710,239	7,344,921
Ceylon ...	13,872,725	12,920,278	11,758,381	9,818,890	9,005,824	10,840,227	9,743,186	10,190,743	10,215,312	10,041,685
Java ...	3,782,783	5,056,106	7,197,592	7,443,791	7,171,351	6,962,024	6,745,058	6,282,103	5,357,394	9,125,502
Sumatra ...	104,227	218,377	1,111,067	3,198,978	1,411,956	2,788,020	3,208,861	3,007,208	4,158,687	4,763,346
Africa ...	...	4,625	9,834	13,016	...	35,514	29,567	8,172	6,798	75,523
Blended ...	306,178	297,167	346,095	601,916	582,689	209,000	291,103	293,700	171,987	221,348
Total ...	27,951,277	27,954,601	31,047,619	29,355,922	24,714,375	26,363,315	26,350,926	25,246,895	26,620,417	31,572,325
Other Blk. Blends ...	...	3,922	935	3,330	2,030	58,132	21,140	62,125	130,461	6,620
Formosa ...	...	242,824	2,384	73,902	1,297,321	236,912	891,452	3,432,487	982,508	1,935,936
Japan ...	...	...	1,402	1,700	341,352	530,505	536,672	726,736	131,788	407,660
Congou ...	1,017,253	1,760,798	1,335,932	2,461,795	3,133,328	2,632,278	1,194,223	961,039	1,063,063	1,520,288
Total ...	1,017,253	2,007,544	1,340,653	2,540,727	4,774,031	3,457,827	2,643,487	5,182,387	2,307,820	3,870,504
Total All Blks. ...	28,968,530	29,962,145	32,388,272	31,896,649	29,488,406	29,821,142	28,994,413	30,429,282	28,928,237	35,442,829
Green Teas—										
Japan ...	10,195,429	9,161,670	9,375,399	9,110,715	8,175,971	6,311,145	6,510,021	8,890,082	5,716,770	8,610,112
,, Dust ...	1,292,100	1,397,610	1,996,970	2,178,818	1,466,642	1,719,970	1,359,290	1,497,767	1,469,667	1,694,750
,, Gunpowder ...	...	...	...	176,118	130,195	139,007	70,315	39,565	23,024	292,420
India ...	32,500	43,643	...	...	...	...	...	...	...	...
Ceylon ...	201,650	350	...	62,555	72,800	11,820	50,000	...	...	...
Ping Suey ...	3,156,388	3,161,485	2,547,808	3,280,106	1,946,052	1,489,194	2,328,003	2,257,314	1,587,260	519,666
Country Green ...	255,546	470,056	116,386	346,472	149,964	257,847	168,933	135,136	69,738	71,025
	15,133,613	14,234,814	14,036,563	15,154,784	11,941,624	9,928,983	10,486,562	12,819,864	8,866,459	11,187,973
Oolong—										
Formosa ...	3,755,437	4,592,432	5,683,353	5,434,880	4,125,063	5,493,467	2,948,995	3,001,773	3,142,261	2,315,695
All others ...	484,646	332,724	309,116	402,043	368,172	372,433	391,528	644,137	377,530	515,251
GRAND TOTAL ...	48,342,226	49,122,115	52,417,304	52,888,356	45,923,265	45,616,025	42,821,498	46,895,056	41,314,487	49,461,748

TEA QUOTA PRICES

The Quota prices ruling in South India on 24th April were:—

Tea Export Quota ...	5 annas 10 pies per lb.
Internal Market Rights ...	1 pie per lb. (Nominal)

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 15th April were:—

Rubber, including export licenses ...	54.50 cents a lb.
Rubber Export Quota	19.75 cents a lb.
Rubber 1st quality	35.00 cents a lb.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

The new season's report has not yet been received.

RUBBER.—London Rubber on April 22, 1940, 11 1/16*d*.

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on Apr. 9 & 16, 1940
Bengorm	82/96
Brooklands	90
Chamraj	81/95
Deviview	89
Erinkadu	64
Glendale	92
Gundumallay	88
Kylasanaad	64
Neelgiri	65
Parkside	93
Rob Roy	77
Singara	98/1.02

South Indian Tea (*contd.*)

	Sales on Apr. 9 & 16, 1940
Sutton	77/87
Vagavurrai	84

Rubber

	Sale on Apr. 11, 1940
Ribbed Smoked Sheet ...	52½
Contract Crepe ...	53
Mottled Brown Latex Crepe	51 to 52
Brown Scrap Crepe ...	51 to 51¾

The Madras Market

Current on 25th April, 1940

The following report on the Madras Market is made available to us through the courtesy of Messrs. Paterson & Co., Share Brokers, Madras:—

Since our last report a fortnight ago the local market has drifted back to that state of stagnation which was too common a feature prior to the outbreak of the war in September last. Although the undertone is fully steady the turnover reported during the past fortnight has been very limited. The Budget announcement at Home has been generally well received. Its main result has been the further strength of Sterling

Gilt-Edged market. 3½% War Loan crossing par. This strength has naturally been reflected in a firmer rupee market. The past two days have also seen an upward trend in the leading intermarket speculative counters.

Rubber.—The price of Spot Rubber has again fluctuated around 11*d*., the local price being approximately 35 cents per pound uncouponed rubber and 19 to 20 cents per pound for the rubber export quota. The latest American Questionnaire figures for February consumption appear reasonably satisfactory at 49,800 tons for February against 42,365 tons for the same month a year ago. Very little fresh interest either speculative or otherwise has been shown in local shares in spite of the declaration and payment of satisfactory dividends in some of the sounder stocks. Cochin Malabars have rallied to Rs. 6¼ ex the dividend of 7½%. On the other hand Cochin Rubbers have been completely neglected closing at Rs. 12¼ nominally ex the dividend of 10%. Vaikundams were also featureless with possible buyers around Rs. 6¾ ex the dividend of 5%. Malankaras were lower, business going through at Rs. 35. Among the more speculative stocks Midlands were steadier at Rs. 4¼ while there was some demand for Tropicals at Rs. 16¼ and Velliamattams at Rs. 15½. Rajagiris were quiet at Rs. 4-5 as., and Thirumbadis at Re. 1-9 as.

Teas.—A steady business has been transacted in most of the local tea shares. Peermades changed hands in fairly reasonable parcels at Rs. 26¼, and Periakaramalais at Rs. 17-6 as. Chembra Peaks were a quiet feature fluctuating between Rs. 3-3 as., and Rs. 3¼. Kalasa Teas were steady with buyers over at Rs. 5¼ but Devasholas were quiet at Rs. 7½ sellers cum dividend. Parkside Nilgiris were on offer at Rs. 18¾ but United Nilgiris sagged to Rs. 109 at which price there were good buyers over. Ouchterloney Valley 6% debentures changed hands at Rs. 101 but at the close there were no quoted sellers below Rs. 102. One marking was recorded in the ordinary shares at Rs. 2-1 anna.

FORTNIGHTLY RAINFALL STATEMENT

April 1, 1940 *to April* 13, 1940—(*Inclusive*)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	...	...	...	...
3. Kallar B'dge	...	0·29	...	0·29
4. Koney ...	...	3·52	...	3·52
8. Twyford ...	...	0·51	...	0·51
9. Pettimudi ...	...	1·75	...	1·75
10. Kalaar ...	...	1·97	...	1·97
11. Chittavurrai...	...	1·48	...	1·48
12. BODI'KANUR ...	...	1·10	...	1·10
13. COCHIN ...	...	1·78	...	1·78
14. Mooply ...	...	3·17	...	3·17
15. Pachaimallai	...	0·78	...	0·78
16. Mudis ...	...	1·88	...	1·88
17. POLLACHI ...	...	...	...	...
18. Ropeway Waterfall ...	...	0·34	...	0·34
21. Kerala Estate	...	3·14	...	3·14
22. Nadavattam	...	0·64	...	0·64
24. Coonoor ...	...	5·06	...	5·06
25. Kotagiri ...	...	3·79	...	3·79
26. Ootacamund...	...	0·87	...	0·87
27. Yercaud ...	...	...	...	...
30. Devarshola T.E.S. ...	...	0·24	...	0·24
31. CALICUT ...	...	...	...	...
32. Kuttiyadi ...	...	...	...	...
33. Vayitri ...	...	0·25	...	0·25
34. Manantoddi...	...	...	...	...
35. Bilgiris ...	...	0·52	...	0·52
36. Pollibetta ...	...	0·47	...	0·47
39. Coovercolly ...	N.R.	N.R.	...	...
41. Kadamane ...	...	0·34	...	0·34
43. Merthisub'gey	...	5·0	...	5·0
45. Balehonnur ...	N.R.	N.R.	...	...
46. MANGALORE ...	...	...	...	...
47. MADRAS ...	...	...	...	...

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

We have received a copy of a circular on the British War Savings Movement; a Committee is in process of formation in Madras and the temporary corresponding member is Mr. G. E. Walker. The Movement is designed to facilitate regular contributions from India to the finance of the war by investing in National Savings Certificates and National Defence Bonds, and should be of interest to all readers of the *Chronicle*.

The procedure is described as follows:—

'The system is simple. The Application Form is completed for the monthly amount that the individual can save for this purpose, by order on his private Bank, deduction from salary if the Employer will consent to make the remittance after such deduction, actual remittance by the individual or otherwise. The Bank, to whom the Application Form is addressed, will purchase the Security selected for as many units as the sum permits at the current rate of exchange and hold any small excess pending a further remittance enabling further purchase. The Bank will notify the purchases it makes.

'Certificates can be sent to the applicant in India, if a statement to that effect is included in the application form, but otherwise the security will be held by the Bank in London on account of the applicant. The Bond Book for Defence Bonds must remain with the purchasing Bank in London to enable further purchases. It is recommended that the Securities should be held in London or at any rate in the United Kingdom to avoid any possible Indian Income Tax complication when the Security is encashed or becomes payable and, in the case of Defence Bonds, when interest is paid. (*Note*:—At present Income outside India and which is not brought into India does not attract Indian Income Tax as to the first Rs. 4,500.)'

The leaflet contains also an appeal to employers to assist by acting on the request of their employees to make monthly deductions from salary for the purpose of purchasing Savings Certificates or National Defence Bonds; employers are being separately addressed on the subject and are being asked to allow facilities for information to be circulated amongst their employees. Particulars of the loans are probably known to most of our readers, but are quoted here again for your information:—

'The Certificates cost fifteen shillings each and are encashable at any time with accrued interest subject to a few days notice. The interest is added as follows:—

At the end of 1st year, 3*d.* interest is added.

Thereafter, ½*d.* is added at the end of each completed period of one month up to the end of the 10th year.

A bonus of 3*d.* is added at the end of the 5th year and a further bonus of 6*d.* at the end of the 10th year. The value of the Certificate is thus 17*s.* 6*d.* at the end of 5 years and 20*s.* 6*d.* at the end of 10 years. The yield on the transaction if the Certificate is held to maturity at the end of 10 years is £3 3*s.* 5*d.*%. The Certificates are free of United Kingdom Income Tax. The maximum holding of all issues of National Savings Certificates is 500 but each member of a family may hold the maximum.'

The question of investing savings is a difficult one, and particularly so for younger men; investment in National Certificates or Defence Bonds gives the best security in the world, and helps in the prosecution of the war and the preservation of the principles for which we are fighting. Investment in these Securities is strongly recommended to all planters both in their own and in the national interests.

SOUTH INDIAN PLANTERS' BENEVOLENT FUND

At the meeting of the Committee of the Fund held on 8th April 1940, it was decided that the Rules should be amended by the deletion of the word 'unanimous' in Rule 22, and a formal notice of the proposed amendment has been sent to members. It may be assumed that the proposal will receive general support, and it should also, we hope, go a long way to meet the objections of those who have suggested that, under the present Rules, the Fund appears more of a Mutual Benefit than a Benevolent Fund. Under the amended Rules there will be no difference in the procedure to be followed by an applicant who has, as compared with one who has not subscribed to the Fund; each case will be put forward by the Committee of the District Association concerned, a majority recommendation being sufficient for the Committee of the Fund to take the case under consideration.

TAILPIECE

The following is supplied by a reader:—

'An American correspondent quotes a British conscientious objector, who appeared before a tribunal in London to claim exemption, as saying: "I would allow the German army to march into London, and instead of greeting them with machine guns, I would give them cups of tea. That would completely demoralise them." Our American friend adds the following comment: "Even better, give them cups of that stuff you call coffee. That would shatter them!"'

COFFEE SCIENTIFIC DEPARTMENT

Quarterly Report of the Coffee Scientific Officer, U.P.A.S.I., for the period September to December 1939.

The following report comprises notes on work in progress during the quarter ending 31st December 1939.

Hemileia Vastatrix.—Work on this disease continued during the quarter along the lines previously reported. Most of this work at the moment is of a routine nature and calls for no special comment.

Tree Observations.—These were continued with an observation in December, when the fruits were harvested. With two exceptions all the trees set their blossom better this year than last. The analysis of the data is continuing and it is hoped to have a summary of the information available by the end of the year.

Spraying Work.—Observations on disease severity were made during the quarter in the experiment on nozzle size and volume of spray and in a comparative trial of Perenox against Bordeaux mixture. In the former experiment, the first harvest records which could have been affected by the treatments were also obtained.

1. *Nozzle Size and Volume of Spray Experiment.*—Differences in the disease situation in the various plots of this experiment were very small this season, on account of the low level of disease attack. The yield records showed, however, that the effect of the different treatments in the previous year had shown yield differences. The increasing volume of liquid applied resulted in significant increases in yield. With the volume kept constant and the nozzle size varied the yield increased with increasing nozzle size though the difference was only significant between No. 0 and No. 2. A full account of this experiment to date is in preparation.

2. *Spray Materials.*—The trial of Perenox against Bordeaux indicated that the control of disease was not so good with the former as with the latter. The Perenox was used at strengths of 3⅓ lbs. and 1¼ lb. per 100 gallons. The results with the higher strength were better than with the lower. However, another experiment, conducted by the Assistant in Coorg, showed no superiority of Bordeaux over the higher concentration of Perenox. Fuller details of these trials will be made available when records from the latter experiment are collected in the dry weather of 1940.

Arrangements were made at the Station to lay out an experiment on still further reductions in the strength of Bordeaux, in view of the possibility that the War would make supplies of Copper Sulphate difficult to obtain and higher in price. Results will be published as they become available.

Other Work.—A visit was paid to Coorg in October and a series of addresses given at public meetings of planters at Pollibetta, Mercara, Somwarpett and Sanivarsante.

Work of the Assistant Coffee Scientific Officer:—

Borer.—Most of the Assistant's time has been given to work on borer. This has included the study of the distribution of emergences in the season, laying out of field trials of stem washes on more satisfactory lines than have previously been possible so that results may be interpreted statistically, studies on egg laying both on coffee and other plants and on cut branches of various tree species common in or around coffee estates and laboratory trials of a number of materials which have been suggested as ovicides and repellants. Results of this work will not be available until next year but a preliminary report of the season's work is in preparation.

It may be said that up to date, no material has been found which exerts any very active repellant action on the adult female, though several materials of excellent ovicidal properties are available including an indigenous product—an emulsion of cashew shell oil.

Some attention was given to an attack of thrips on a cardamom nursery. This appears to be a different species from that responsible for kaggi kai or fruit warting. Several dusts were applied in an attempt to reduce the damage, but results were not encouraging.

In addition, records were collected from the trial of Perenox and another proprietary fungicide, Fungex, against Bordeaux. The results with Perenox have already been noted. The other material proved of no value in the control of Leaf Disease.

Seasonal Conditions.—The N.-E. monsoon was vigorous this year for the first time for several years and the rainfall of October was heavy at the Station. Rains fell up to the middle of November, after which dry weather set in, and continued to the end of the quarter. The coffee at the Station was in excellent condition throughout the quarter; disease was evident but not severe enough to cause any very marked loss of leaf. Complaints were received of crops falling short in some areas, especially so in parts of Coorg, while reports of severe black bean were received from the Bababudins, Billigirirangans and parts of the Nilgiris. Other areas appeared to be free of these defects and at the Station, the crop picked was exceptionally free from defective beans.

Diseases.—No new diseases were reported during the quarter nor any exceptional outbreaks of diseases already known. A leaf disease of Grevilleas was received during the quarter which proved to be *Phyllosticta*. This is the first time that this disease has been reported from coffee areas with any suggestion of serious damage. An inspection of Grevilleas in coffee areas has shown, however, that the disease is present in Mysore fairly generally without signs of serious injury.

Correspondence and Publications.—Correspondence was dealt with as usual during the quarter.

An article on 'Coffee Borer' published in the Bulletin *Economique de l'Indo-Chine* was translated and printed in the *Planters' Chronicle*, together with a commentary.

W. W. MAYNE,
U.P.A.S.I. Coffee Scientific Officer.

SOUTH TRAVANCORE PLANTERS' ASSOCIATION

We have been asked to draw attention to the change in the Honorary Secretaryship of the South Travancore Planters' Association; with effect from 25th April 1940 all correspondence should be addressed to:—

The Honorary Secretary,
South Travancore Planters' Association,
Isfield Estate,
Kalthuritty P.O. (Travancore).

UNITED PLANTERS' ASSOCIATION OF SOUTHERN INDIA

(Incorporated)

Extracts from the Proceedings of a General Meeting of the United Planters' Association of Southern India (Incorporated) held at 'Glenview', Coonoor, on Tuesday, 9th April 1940, commencing at 2-30 p.m.

Forty-eight Ordinary Members were present in person and by proxy, seven Firm Members, and representatives of seven Association Members.

Mr. E. H. Francis, President of the Association, presided.

The Secretary read the notice calling the meeting.

PROCEEDINGS OF LAST MEETING

President.—I will now ask the meeting to confirm the proceedings of the previous General Meeting held on 28th July 1939. These have been published in the Year Book and in the *Planters' Chronicle* and if the meeting agrees I shall take them as read.

I now move from the Chair:—

'That the proceedings of the last General Meeting held on 28th July 1939, as published in the U.P.A.S.I. Year Book, be Adopted.'

The resolution was put to the meeting and carried.

BUDGET FOR THE YEAR 1940-41

The President.—Our next item is to consider the budget for the year 1940-41. This has been circulated to all members, and I shall be glad to know whether any member has any criticisms to make or questions to ask.

Mr. R. Fowke raised the question of the Dinner at the time of the next Annual General Meeting.

The President.—The Committee thought that during the period of the war they ought to save money as far as the Association is concerned. We however contemplate going back to the arrangement adopted in the year 1938 when a dinner was held at which members who attended paid their own expenses in full. We propose to hold a dinner this year on similar lines; we shall probably invite a few distinguished visitors; they of course will not pay their way, but the members of the Association would be asked to pay their share for the dinner.

There is one other point I would like to refer to. It is possible that we shall have to make a slight modification of the budget in some months' time if our Secretary, Mr. Acaster, joins the Army. Mr. Acaster naturally is anxious to serve if possible, and your Executive Committee do not intend to stand in his way if they can arrange a suitable relief; a suitable relief is difficult to find for such a specialised job and we do not think we can possibly find a suitable man within the next four months anyhow. The Executive Committee therefore decided yesterday to ask the National

Advisory Committee to remove Mr. Acaster's name from class 'D' and place it under class 'C'. That will give us time to try and find a suitable substitute. There is however a possibility of Col. Brock being willing to serve in his old capacity as Secretary in Mr. Acaster's absence; and I intend to cable to Col. Brock and follow it up by a letter. If circumstances permit, I think he will be willing to resume his old duties. This would mean that the Association would have to meet some extra expenditure because, as you know, the Association has agreed that employees should not suffer financially through doing military service; in other words, Mr. Acaster's military pay will have to be made up by the Association to the extent of his civil pay, and at the same time we shall have to pay the acting man. In the event of this position arising we may have to draw from the reserve.

Mr. H. C. Boyd.—Would Col. Brock still draw his pension?

The President.—That will be taken into consideration in fixing his pay out here. This is only an idea that occurred to us yesterday; we cannot say whether he will be available or willing to accept the job.

Mr. Carson Parker.—By getting Col. Brock, will it not increase our expenditure? Is it not better to take a local man?

The President.—No, Sir, no extra expenditure is anticipated except that we should have to pay Col. Brock's passage out now, and his passage home at the end of the war.

If no other member has any questions to ask or remarks to make on the budget, I propose from the Chair:—

'That the Budget for the year 1940/41, as circulated to all members, be passed.'

The resolution was put to the meeting and carried.

SUBSCRIPTION FOR THE YEAR 1940-41

The President.—The next item is to fix the subscription for the year, and I now propose the following resolution:—

'That in accordance with the provisions of Article 9 (a), the following be the rates of subscription payable by the Ordinary Members of the Association for the financial year, 1st April 1940 to 31st March, 1941:—

(1) For all ordinary members, owning a total planted area of more than 150 acres of tea, coffee, rubber, cardamoms, cinchona and pepper, at the rate of 3 annas 9 pies per acre planted.

(2) For all Indian ordinary members, owning a total planted area of more than 150 acres of tea, coffee, rubber, cardamoms, cinchona and pepper, who give notice that they do not wish to bear any share of the Association's Contribution to any Political Organisation, as provided for in Article 9 (a) (i), at the rate of 2 annas 3 pies per acre planted.

(3) For all ordinary members owning a total planted area of 150 acres, or under, of tea, coffee, rubber, cardamoms, cinchona and pepper, at the rate of 8 annas for every completed 10 acres up to 100 acres planted, provided that no such member shall pay less than a minimum subscription of Re. 1.'

The resolution was put to the meeting and carried.

The President.—That concludes the ordinary business of this meeting, and under the head of 'Special Business' we have to consider certain proposals for the amendment of the Articles. The first four of these are designed to make more clear the qualifications for eligibility for the Presidentship and Membership of Executive and Product Committees; the present wording of the Articles is ambiguous, inasmuch as it refers to 'Members', and it is not always clear whether members of the Association (which in most cases means Estates and Companies) or individuals is intended. Your Committee are agreed that it is preferable that individuals should be elected by name to Committees as has in fact been the practice, and the amendments proposed are designed to regularise the position. I will now read out each amendment separately; will you please indicate in the usual way whether or not these have your approval. I propose from the Chair:—

(1) That after Article 16 of the Articles of Association the following be inserted :—

VII-A. Eligibility.

16-A. The following shall be eligible for election to the Presidentship of the Association and to Membership of the Executive and Product Committees, viz.—

(i) Any Ordinary Member being a person :

(ii) Any Director, Partner or Employee of any Ordinary Member being a person, a Firm or a Company ;

(iii) Any Director, Partner or Employee of any Firm Member ;

(iv) The representative of any Association Member.

Mr. Boyd.—Is it not advisable to include a reference to the Labour Department in this?

The President.—I don't think it is necessary to insert the Labour Department in view of the fact that the Labour Department can make their own rules.

If no member has any remarks to make, I move from the Chair:—

'That the Amendment to Article 16 as above be adopted.'

The resolution was carried.

The President.—The second resolution follows on the first and I move from the Chair:—

(2) 'That after the words "Hereinafter constituted" in Article 17 (a) (ii) the following shall be added :—

'But shall assume office as from the time of the election of the President of the Association for the ensuing year.'

The resolution was carried.

The President.—The third resolution reads as follows:—

(3) 'That for Article 17 (a) (iii) the following be substituted :—

'Two Members to be Co-opted by the above-mentioned four Members from among the Representatives in any Legislature in Southern India or in the Central (Federal) Legislature.'

which I move from the Chair.

The resolution was put to the meeting and carried.

The President.—I have now to move the fourth resolution from the Chair:—

(4) 'That in Article 76 the words from "any Ordinary Member" to "President of the Association" be deleted.'

This is merely consequential on those passed this afternoon.

The resolution was carried.

The President.—There is one other amendment on the Agenda and that is the proposed substitution in Article 51 of the words 'ONE MONTH' for the words 'seven days'.

It is the practice at the present time for the Coffee Section, for example, to hold its Annual General Meetings in Bangalore, and the most suitable date is frequently at the time of the S.P.M.R. Camp and, I believe also, the time of the Bangalore Races. This date may be as much as a month before the other U.P.A.S.I. General Meetings, and under the existing Rule the newly elected Committee must meet again within seven days of the U.P.A.S.I. Annual General Meeting to elect its Chairman and representative on the Executive Committee. As a Committee meeting is usually held immediately after the General Meeting, it appears desirable that the Committee should be empowered to elect its Chairman and Executive Committee Representative immediately, and the proposed alteration provides for this. I therefore move from the Chair:—

'That in Article 51 for the words "Seven Days" the words "One Month" be substituted'.

The resolution was put to the meeting and carried.

The President.—That concludes the business of which formal notice is necessary. I would like, however, to refer here to the proposal made by Mr. F. E. James at the last Annual General Meeting, in which he suggested an alteration in the procedure at these Annual Meetings. The suggestions made at that time have been considered by your Committee, and approved by them. It is suggested, therefore, that our procedure at the July or August meetings should be as follows:—

1. What was previously called the 'U.P.A.S.I. Annual Meetings', 'Planters' Week', and so on will be known as the 'Annual Conference of the United Planters' Association of Southern India'.

2. This Annual Conference will be opened officially by the Governor or some other distinguished person on the first day; the programme for that day will include only speeches by His Excellency and/or the other distinguished persons present, and the annual address by your President.

3. During the next week, the meetings of Sections, Section Committees, Scientific Conference, Labour Department, Benevolent Fund, etc., will be held. In the case of Section General Meetings, the formal business of the meeting will be held first, and thereafter the meetings will continue as part of the U.P.A.S.I. Annual Conference; this will make it possible, without violating the Companies' Act, to discuss questions of which no notice has been given, but which Members may wish to raise at the meeting. In this connection, I would like to stress two points. The first is that no resolution can be passed in such circumstances which is binding on members of the Association; it can only be a resolution passed at a meeting of members of the Tea or Coffee or Rubber Section. The second is that, although this new procedure is intended to allow as it were for

greater elasticity in the conduct of these meetings, the Executive Committee will still ask members to give as long notice as possible of any resolutions which they propose to raise. It has happened in the past that resolutions of some importance have been received only a day or two previous to the meeting, or have even been suggested for the first time at the meeting itself; you will realise that in such circumstances it is not always possible for your Committee to give these resolutions proper consideration. While, therefore, at this Conference it will be possible for members, with the permission of the Chairman, to move a resolution during the meeting without notice, the Committee request that in all cases where it is possible at least three weeks' notice should be given.

I shall be glad to have members' suggestions on this proposed procedure. Might I ask Mr. James to expound the virtues of this new arrangement?

Mr. James said that the fact of the matter was that they had been holding the U.P.A.S.I. Annual Meeting for some years past in a form which was not strictly in accordance with the Articles of Association or the Indian Companies' Act. The proposed change in the procedure was designed to meet this difficulty and to separate the various meetings held during the week from the formal Annual General Meeting of the Association which is held in accordance with the Companies' Act. According to this new procedure, therefore, all the meetings, whether of product sections or for scientific purposes or of the Benevolent Fund, would be included under one general description, 'The Annual Conference of U.P.A.S.I.' It would be this Conference which H.E. the Governor or some other distinguished person would be asked to open. Thereafter the various section and other meetings, and, on the last day, the formal Annual General Meeting to elect the President, pass the accounts and appoint auditors, would be held. After this formal meeting the Conference of U.P.A.S.I. would hold its concluding sessions. The proceedings at the formal Annual General Meeting would be strictly regulated by the Articles of Association and the provisions of the Companies' Act. The proceedings of the Conference on the other hand would be more flexible and resolutions at short notice might be admitted, subject to the approval of the President.

Resolutions passed at the Annual General Meeting would, of course, have statutory and binding force as far as U.P.A.S.I. as a company was concerned. Resolutions passed at the Conference would carry the same weight as resolutions had carried in the past, i.e., the weight of the opinion of members of U.P.A.S.I. who had gathered together at the Conference and agreed to some expression of opinion.

The meeting agreed with the suggested procedure.

DATE OF THE NEXT ANNUAL GENERAL MEETING

The President.—The Executive Committee have decided to fix August 3rd to 9th as the dates for holding the next Annual General Meeting of the U.P.A.S.I.

EXPORT ADVISORY COUNCIL

Mr. Ivor Bull.—I think Mr. James can give us some information about a Department which the Government of India are setting up to sell our produce.

Mr. James.—I mentioned it at the Executive Committee meeting yesterday. It was suggested that we might indicate the Association's approval of the steps which the Commerce Member of the Government of India proposes to take, namely, to appoint an Export Advisory Council to assist the Government of India in protecting the interests of the exporters of Indian produce, particularly agricultural produce. I think it will help our interests if the U.P.A.S.I. passes a resolution at the Annual General Meeting welcoming the announcement of Sir A. Ramaswami Mudaliar and stressing the importance of adequate representation of agricultural interests on this Export Advisory Council, and forwards it to the Government of India. Such a resolution can be passed informally at this meeting; I am sure Sir Ramaswami Mudaliar will appreciate it.

Mr. Langley.—I think we ought to mention in that resolution that we should have a representative of South Indian planting interests on the Export Advisory Council because, judging by the remarks that appeared in the press on this Council, the idea was sponsored originally by the Federation of Indian Chambers of Commerce and consequently I know that there will be a strong move that there should be practically none but Indians on the Council; and in the ordinary way from what we know in connection with such bodies the Government of India might be inclined to have only one European Member on that Council, and almost inevitably that man will probably be a representative of either the Indian Tea Association, Calcutta, or the jute interests in Calcutta, and we would be baulked. As far as could be gathered from the discussion which took place at the Executive Committee meeting yesterday, the Tea interests are not really much concerned on this particular point because they are already selling their output to the Food Controller at home, and so they are adequately protected in respect of their exports; but it is the smaller planting products, for example, cardamoms, that we in South India are concerned with, and I think we might definitely state in our resolution our requirements, namely, a representative from the United Planters' Association of Southern India on that body. (*Hear, Hear.*)

The President.—Would you care to move a resolution on that subject, Mr. Langley?

Mr. Langley.—I have much pleasure in proposing the following resolution:—

'This Association welcomes the announcement of the Commerce Member the Honourable Dewan Bahadur Sir Ramaswami Mudaliar, with regard to the appointment of an Advisory Council to assist the Government of India in expanding opportunities for the export of Indian commodities, more especially Agricultural Products; and urges upon the Government of India the importance of adequate representation of plantation interests in South India on such a Council, and recommends that the United Planters' Association of Southern India be invited to nominate a representative to it.'

Mr. Ivor Bull.—I second the resolution.

The resolution was put to the meeting and carried unanimously.

There being no other business, a vote of thanks to the Chair having been proposed by Mr. Naylor, the President declared the meeting closed.

A. G. ACASTER,
Secretary.

TEA PRODUCT SECTION

Extracts from the Proceedings of a General Meeting of the Tea Product Section of the United Planters' Association of Southern India held at 'Glenview', Coonoor, on Monday, 8th April 1940, commencing at 3 p.m.

Thirty-five Ordinary Members were present in person and by proxy, and three District Associations were represented.

Mr. P. A. Naylor, Chairman of the Tea Product Section, presided.

The Secretary read the notice calling the meeting.

PROCEEDINGS OF LAST MEETING

The proceedings of the Annual General Meeting held on 26th July, 1939, at 'Glenview', Coonoor, as printed in the Association's *Year Book*, were taken as read and confirmed.

The Chairman.—Since the last meeting we have had three special informal general meetings, one on 25th September 1939 in connection with the Short Term Contract (particularly with regard to the price of tea as at 21st August when usually the prices in South India are the lowest and those in North India the highest); on 23rd January we had another informal meeting with regard to the Long Term Contract, and on 14th February we had a meeting at which we met Mr. Y. Sukthanker, Tea Controller for India. These meetings were held at very short notice to discuss questions of Emergency Tea Control and cannot be regarded as formal general meetings of the Section. The proceedings of these meetings have been forwarded to all members of the Section and I would now ask you to confirm them.

The meeting confirmed the proceedings, as circulated to the members, of the informal General Meetings held on 25th September 1939, and 23rd January and 14th February 1940.

TEA SCIENTIFIC STATION BUDGET FOR 1940-41

The Chairman.—This has already been circulated to all members, but I very much regret that the budget was sent out only at the minimum stipulated period before the meeting as its preparation was unfortunately held up by our Scientific Officer being on tour practically the whole of February up to 19th March.

The Tea Section Committee at its meeting held on Saturday, the 6th April, recommended that instead of the cess being at 3 annas 6 pies per acre and budgeting for a deficit of approximately Rs. 2,160, the cess should be increased for the forthcoming year to 4 annas per acre, as they thought that this was not a good time to draw upon our reserves. It was their opinion that the reserves might be required at some difficult times in the future. If we pass the budget with the cess at 4 annas per acre, then it will leave us with an excess of income over expenditure of about Rs. 2,055. Our Scientific Officer has drawn up a memorandum for extending the work of the Department to cover a longer period but it is not ready at the moment to be sent out to all members of the Tea Product Section. I would like to know if any member wishes to say anything with regard to the budget and the suggested cess of 4 annas per acre.

Mr. W. Grant.—I have received instructions from certain interests which I represent to oppose the proposed increase of cess on the ground that the memorandum in question has not been received by them so that they have not had an opportunity of considering it and to form an opinion whether or not the proposed increase of cess is justified.

The Chairman.—Actually, Mr. Grant, the position is that this increase of cess is not for putting into effect the terms of the memorandum. The budget with the cess at 4 annas is intended entirely to subsidise the work that is being carried on by the Department at present. The memorandum in question has to be circulated, and in any case it will take anything from six to nine months to get the proposals contained therein into working order. Leaving that apart, the memorandum as it stands at present will be circulated.

Mr. Grant.—I don't think that six pies will be required for balancing the budget; three pies will I think be enough for this purpose.

The Chairman.—The Tea Section Committee thought it better to estimate for a small excess of income over expenditure especially in view of present conditions and thus keep our reserves intact. The present budget of 4 annas per acre is actually only to carry on with the Department as it stands.

Mr. Grant.—Personally I fully agree with the Committee's decision. I am however not in a position to support an increase of the cess beyond the extent necessary to balance the budget.

The Chairman.—If no other member has any points to bring up I propose from the Chair:—

'That the Draft Budget, as amended, of the Tea Scientific Department for the year 1940-41 be approved.'

The budget as it stands shows only 3 annas 6 pies as the rate of cess; it was amended by the Tea Section Committee only on Saturday, 6th April, at their meeting to 4 annas per acre. The budget in the amended form has not been circulated.

Mr. Grant.—I then propose the following amendment:—

'That the cess be increased from 3 annas 6 pies to 3 annas 9 pies per acre in order to actually balance the budget.'

There being no seconder for Mr. Grant's amendment, the Chairman put the resolution as proposed by him to the meeting.

The resolution was carried.

COLLECTION OF PRODUCT CESS

The Chairman.—The next item on the agenda is to fix the product cess. In accordance with the draft budget which has already been approved, the cess has been increased by six pies to 4 annas, and I therefore move from the Chair:—

'That the rate of Tea Product Cess for purposes of meeting the expenses of the Tea Scientific Department for the year 1940-41 to be collected from all subscribing members of the Tea Product Section be at the rate of four annas per acre.'

The resolution was carried.

TEA SCIENTIFIC DEPARTMENT FINANCE

The Chairman reminded members that the guarantee period of the Department would expire on 31st March 1941, and referred to the fact that the period of the reduced allotment of Government grant would expire at the same time. He also told members that support for the Scientific Department for a further period after 31st March 1941 had been received from about 118,000 acres and that it was more than probable that further support would be received during the year. He added that he had already referred to the long-term work of the Department that was going to be circulated under a special memorandum, and asked the members if they wished to bring up anything under the subject of Tea Scientific Department Finance.

No member having any points to raise, the ordinary business of the meeting concluded and the Chairman passed on to the 'Special Business' on the agenda.

TEA CONTROL IN NATIONAL EMERGENCY

The Chairman.—Members have been kept as fully informed as possible on this subject; it has been placed on the agenda of this meeting in case any member has any particular point he wishes to raise. The first one I imagine will be 'When will the long-term contract be issued?'; the answer to that is that here in South India 'We don't know'. We have urged the Tea Controller that this form should be issued as soon as possible but the latest news is that minor points were still under discussion with the Ministry of Food, and that it was hoped to issue the form at an early date. That was on 18th March 1940. Does any member wish to raise any points in connection with the general subject of the Emergency Control Scheme?

Mr. Grant.—We have a point on which we have applied for information to the Controller; it is in connection with the f.o.b. cash price decided on by the draft form which has already been issued to estates. That form is based on the London price less certain deductions, one of which is deduction for 140 days' interest at 5%. Since the beginning of the year the estates have received 8*d.* per lb., and there is a balance remaining to be paid by the Controller. The question now is when that balance comes to be settled whether it is chargeable with 5% interest.

The Chairman.—I think it is a point which is worthy of being cleared and I suggest that the U.P.A.S.I. should take it up.

The meeting agreed that the U.P.A.S.I. should take up the question of deduction of interest at 5% for 140 days in respect of balances, over and above the 8d. per lb., remaining to be paid by the Controller.

Mr. R. Fowke.—Mr. Chairman, I have just received the following circular No. 41 dated 4th April from the Tea Controller, which might be of interest to the meeting:—

'According to the information received from the Ministry of Food the total amount required under the Long Term Contract by the Ministry of Food is 323 million lbs. This amount is arrived at after making provision of 41 million lbs. for out-markets. The actual amount of teas required from contracting estates will be that covered by 90% of the export quota in North India and 85% in South India. An estate will not be compelled to give over and above this percentage in order to make good deficits by other contractors or by the failure of estates to tender as Government has not taken powers at present to compel growers to

tender their supplies; nor does the contract imply under conditions that the Ministry has a call on over and above the quantity tendered, which is strictly governed by the percentage of the total contract to the Indian export quota in North and South India. Should there be a shortage however in the total teas tendered in the first instance the Ministry shall consider the question of accepting surplus supplies if producers are willing to tender them and the teas are found suitable.'

I imagine this circular will be in the hands of contracting estates in the course of the next few days. That makes the total amount for South India 53,833,000 lbs.—85% of the export quota.

The Chairman.—Does it mean that they are not going to accept less than 85% or more than 85% of the export quota from the contracting estates?

Mr. Fowke.—I think that they will not accept less than 85%.

In this connection Mr. Fowke also referred to a telegram from the Ministry of Food to the Tea Controller.

The Chairman.—It appears to be an unhappy position that estates not being able to supply 85% of the export quota cannot participate in the Contract.

In reply to a question by Mr. Koechlin the Chairman said that dust teas will be accepted by the Tea Controller but not from estates which have not exported them to the United Kingdom in any of the basic years.

Mr. P. W. Davis referred to a circular from the Joint Controller, Coonoor, calling for figures of the monthly deliveries of tea by contracting estates, and asked how far it applied to the 1940 contract.

Mr. Fowke said that in his opinion the circular in question was intended only to get an approximate idea of what quantities of tea would be forthcoming during the various months in the contract period for the information of the Tea Controller, to enable him to get a basis on which to work.

The Chairman referred to his talk with Mr. Lloyd (Joint Controller) on the subject and said that what he was given to understand was that a contracting estate was intended to give only an approximate figure of delivery in a given month on the basis of its production and export in previous years.

Mr. Pryde referred to a circular on claims for final payment under the Short Term Contract, in which there was mentioned the deduction of income-tax; he asked how the Rupee Companies, in whose case income-tax was deducted at source, could manage to obtain a refund of the tax which was to be deducted from the final payment.

Mr. P. W. Davis suggested that the deduction of income-tax from the final payment should be strongly protested against.

Mr. Langley thought that they might be able to recover the income-tax under Dominion Income-tax Relief; he was however not in favour of that procedure as it involved great difficulties and delay. He therefore expressed the opinion that they should protest against the deduction of income-tax from the final payment.

The Chairman suggested that the U.P.A.S.I. should make a reference to London on the matter, and the meeting agreed to this suggestion.

There being no other business, with a vote of thanks to the Chair the meeting terminated.

COFFEE PRODUCT SECTION

Extracts from the Proceedings of a General Meeting of the Coffee Product Section of the United Planters' Association of Southern India held at 'Glenview', Coonoor, on Tuesday, 9th April 1940, commencing at 9 a.m.

Twenty Ordinary Members were present in person and by proxy, and three District Associations were represented.

Mr. Ivor Bull, Chairman of the Coffee Product Section, presided.

The Secretary read the notice calling the meeting.

PROCEEDINGS OF LAST MEETING

The proceedings of the previous meeting held on 6th July 1939 at the United Service Club, Bangalore, which had been published in the Year Book of the Association for 1939, were taken as read and confirmed.

COFFEE SCIENTIFIC DEPARTMENT BUDGET FOR 1940-41

The Chairman.—This has been in your hands for some time and, as you will see, the income from the Coffee Cess has been calculated at the same rate as last year. You will notice that provision is made as in previous years for the payment of the subscription of Rs. 960 to the Coffee Section of the British Empire Producers' Organisation from the Coffee Reserve. It has been suggested by many members that this charge is properly one that should be met from the funds of the Coffee Cess. At our Committee meeting which was held yesterday we decided that the Coffee Product Section of the U.P.A.S.I. should no longer continue to pay this subscription, and we are advising the B.E.P.O. accordingly. We are also writing to the Indian Coffee Cess Committee asking them to take over this liability. It seems to us that it was a matter concerning particularly the Indian Coffee Cess Committee, because it related entirely to the marketing of coffee, and that is in the Coffee-Cess Committee's hands. There is also the fact that the payment of that sum to the B.E.P.O. has each year been made from our reserves, which are decreasing very rapidly; the I.C.C.C. have at least some small surplus of revenue from which to pay this subscription.

Mr. Kirwan.—What will be the position if the Coffee Cess Committee decide not to pay?

The Chairman.—If they decide not to pay, then the subscription will lapse. The Coffee Cess Committee are in a better position through Mr. Oliver to decide whether the payment is essential or not; but I believe, Mr. Kirwan, you made a very strong case for the necessity of this payment, so I hope that the Indian Coffee Cess Committee will meet it.

This budget is fairly satisfactory, inasmuch as there is a small increase of acreage, but it is at the same time very unsatisfactory from other points of view, to work even with such a small loss as we have budgeted for. It means that our Scientific Officer after 11½ years of service has still to work on a cut salary; it is rather unfair that the cut which Mr. Mayne agreed to impose on himself voluntarily should still continue. The other unsatisfactory fact is our having to depend on the grant which we receive from the Madras and Coorg Governments for balancing our budget. The only solution for balancing our budget lies in a larger acreage joining this Section and we hope we may be able to persuade more people to subscribe to the Department this year.

There is one other minor item of comment in the budget, and that is, we have provided for the purchase of a typewriter for Mr. Mayne; it will be included in stock account and depreciated in five years. Another expenditure item of Rs. 45 will therefore appear in our revised budget. There is a good deal of correspondence for Mr. Mayne to do, and I can assure you from my personal experience of the letters that reach me from his office that a new typewriter is very necessary.

Has any member anything to ask regarding our budget? If not, I propose from the Chair:—

'That the Coffee Scientific Department Budget for the year 1940-41 be approved.'

The resolution was put to the meeting and carried.

COFFEE PRODUCT CESS FOR THE YEAR 1940-41

The Chairman.—The product cess is the same as last year and as you have approved the budget I now ask you to confirm the following resolution:—

'That the Coffee Product Cess for the year 1940-41 be levied at the rate of three annas an acre from the coffee areas of all members, except those situated in Mysore, liable to pay the cess, and one anna per acre from those situated in Mysore who are liable to pay the cess.'

The resolution was carried.

The ordinary business having concluded, the Chairman proceeded to the two items of special business of which members had received notice.

CARDAMOM SCIENTIFIC RESEARCH

The Chairman.—This is the first item of special business. As you are aware, the scheme put up by the U.P.A.S.I. for a three months' survey of cardamom pests and diseases has been sanctioned by the Advisory Committee of the Imperial Council of Agricultural Research, and it is expected that your Scientific Officer, Mr. Mayne, will be asked to conduct this work. The scheme has still to receive the formal approval of the Governing Body of the Imperial Council of Agricultural Research, but yesterday at our Committee Meeting we received a D.O. letter from Mr. James in which we were advised that this scheme is going to be circulated to the Governing Body. They are not going to wait for the next meeting which might take place at a much later date—in July or August—but have agreed to circulate the scheme for approval, and there would seem very little doubt as to the approval of this survey. I hope therefore that after this survey, we shall be able to get things straight.

The subject of cardamom research has been discussed at the U.P.A.S.I. meetings in the past and resolutions have been put up for several years, but for various reasons nothing very concrete has happened so far, although last year an important beginning was made by the preparation of this survey scheme by Mr. Mayne. We have found out that a great deal of scattered cardamom research work has been done in other places; it has been done at Balehonnur, at Coimbatore, at Bombay, and it has been commenced in Travancore. In many cases it is overlapping. One urgent need now is that all the cardamom research work should be co-ordinated, and the one natural co-ordinating agency for this work is the U.P.A.S.I. Everyone must know that, in addition to the Cardamom Survey Scheme which we have put up, we also put up a Cardamom Research Scheme to the Imperial Council of Agricultural Research, but we have now dropped the latter completely. We shall wait for the result of this survey; as soon as it is completed and circulated, it is our intention to try and arrange a meeting of the Agricultural Officers of the various Governments who are interested in cardamoms with Mr. Mayne. Following that meeting we intend to convene a meeting of all cardamom interests, and we will then ask the Agricultural Officers and Mr. Mayne to draft together a scheme for research work on cardamoms covering the whole of South India including the Bombay Presidency. I think we must believe, from the interest which the Imperial Council of Agricultural Research have shown in the survey scheme, which the Advisory Committee have passed, that any cardamom research scheme put up to them with the support of all the Governments concerned and of the growers in South India, will receive not only the requisite financial assistance but also expert technical advice, which latter I think is just as invaluable as financial assistance.

There is only one other thing for me to say, and that is, that any scheme which is put up by the whole of South India will I am sure receive the loyal support of the U.P.A.S.I.; it does not matter to us where it is placed or who runs it. If we get that scheme started it will be a very great thing. In this connection I would like to thank Mr. James for all the work he has put in in pushing the survey scheme; cardamom growers have become very impatient for the commencement of the work, and but for Mr. James I know that this survey would have been delayed for some time yet. (*Applause.*)

Is there anything else arising out of cardamom research?; if not, I will now proceed to explain the organisation which we have suggested for cardamom growers inside the U.P.A.S.I.

You will have seen from the proceedings of the last meeting of the Executive Committee that an *ad hoc* Sub-Committee has been appointed to look after the interests of cardamom growers on the U.P.A.S.I. A resolution has now been received from one of the Planting Associations asking that a separate Cardamom Product Section should be formed; this was discussed at a Cardamom Sub-Committee meeting yesterday. There is no need to say much about the proposal just now, for, although a separate Product Section might present advantages, it presents many disadvantages also, and the Secretary has been asked to prepare a memorandum setting out both the advantages and the disadvantages of a separate Product Section for cardamoms. After that memorandum has been prepared it will be sent to the Executive Committee and it will then be forwarded to the Planters' Association which sent in the resolution with the Executive Committee's comments, so that this Association can then decide whether it wishes to proceed with the resolution or not. In the meantime I do not think any useful purpose will be served by discussing it. Whatever happens, it is the intention of the Coffee Product Section Committee that matters concerning cardamoms shall be left entirely in the hands of cardamom growers, and that I know is the intention of the Executive Committee as well. The only problem is to find the simplest way of arranging this position. I have given you this information simply to let you know what is being done for cardamom interests, and I should be very glad to answer any questions in this regard.

No questions were raised.

VENUE OF NEXT ANNUAL GENERAL MEETING

The Chairman announced that the Coffee Section Committee had decided at its meeting held on Sunday, 7th April, that the best place for holding the next Annual General Meeting of the Coffee Product Section would be Coonoor. He pointed out that it had been held in Bangalore in the previous year, in the hope of obtaining thereby a larger attendance of planters; the results however had not justified the extra expense, and the Committee had therefore decided that the 1940 meeting should be held in Coonoor.

NOMINATION OF A MEMBER TO THE INDIAN COFFEE CESS COMMITTEE

The Chairman.—The last item of special business is the nomination of a representative of the Association on the Indian Coffee Cess Committee. This Committee, as you are aware, is re-formed every three years, and in August 1938 Messrs. James, Morris and Sprott were nominated as the representatives of this Association. Mr. Sprott unfortunately has now to resign and I would like on behalf of the Section to thank him for his very valuable services on this Committee. The question of appointing a substitute was considered by your Committee this morning, and it was agreed that Mr. Kirwan should be asked to serve as the U.P.A.S.I. nominee on the Indian Coffee Cess Committee until its re-constitution in November of next year. I am very glad that Mr. Kirwan has consented and I think that we may congratulate ourselves that we have in Mr. Kirwan a representative who has done most valuable service on the Coffee Cess Committee from its inception. At the beginning, however, he represented trade interests but he is now a planter again, and that is why we have asked him to serve as our representative. I must mention that I have a letter from the Vice-Chairman of the Coffee Cess Committee pointing out the extremely good work Mr. Kirwan has done from the inception of the Committee.

Unless any member has any other subject to bring up or any suggestion to make, I now declare the meeting closed.

A. G. ACASTER,
Secretary.

DISTRICT NOTES

MYSORE

As a result of a typing error two paragraphs were omitted in the proceedings of the Mysore Planters' Association meeting held on 21st March and published in the *Planters' Chronicle* of 27th April. These paragraphs are as follows:—

Page 186, immediately after the letter dated 27th December 1939 from Messrs. Peirce, Leslie & Co., Ltd., in the paragraph headed 'Planters and Military Service', 'It was decided that the terms detailed were entirely satisfactory and that with the permission of Messrs. Peirce, Leslie & Co., Ltd., their letter should be published in the proceedings of the meeting and be sent to all employers in the Association.'

Page 188, at the conclusion of the proceedings, 'Mr. Kirwan proposed a hearty vote of thanks to the members of the Kadur Club for the use of the Club room.'

'The Chairman then declared the meeting closed.'

GIFT OF INDIAN COFFEE TO THE CANADIAN TROOPS IN FRANCE

The Secretary, Indian Coffee Cess Committee, Bangalore, gratefully acknowledges the following gifts of coffee, and cash donations, in lieu of coffee, received by him up to the 17th of April 1940, for the purpose of making the gift of a suitable quantity and quality of Indian coffee to the Canadian Troops in France:—

A. GIFTS OF COFFEE

3 cwt. from Moodsoosie Estate	3 cwt.
2½ cwt. each from (1) Messrs. T. Stanes & Co., Ltd., and (2) The United Coffee Supply Co., Ltd.	5 cwt.
2 cwt. each from (1) Arabidacool (cash realised Rs. 92), and (2) Balur Estates	4 cwt.
1 bag each from (1) Hanumanhully, (2) Honnametti, (3) Attikan, (4) Gorrayhatti, (5) Kartikerri, (6) Bedaguli, (7) Kulhutty, (8) Elk Hill, (9) Kutchen Huckloo, and (10) Nelliampathy Hills (Cochin) (cash realised Rs. 40) Estates	16¼ cwt.
1 cwt. each from (1) Mr. S. H. Dennis, (2) Mr. C. K. Pittock, (3) Mr. V. L. Travers-Drapes, (4) Coorg & Mysore Coffee Co. (1937), Ltd. (cash realised Rs. 38), and (5) Coovercolly Group, (6) Santagherry, (7) Utollalu, (8) Injipara, (9) Karadykhan, (10) Kolarkhan, (11) Gungegiri, (12) Kondadkhan, (13) Howinhuckloo, (14) Kerehuckloo, (15) Santaveri, (16) Siddakhan, (17) Moganaad Peak, (18) Cauvery Peak, (19) Valalakadai Peak, (20) Puthutotam, (21) Valparai, (22) Kurkenmutty, (23) Mertikhan, (24) Honeyvale, (25) Poothundu, (26) Rockwood, and (27) Kunmergode Estates	27 cwt.
½ cwt. each from (1) Merthicowanhalla (cash realised Rs. 20), (2) Udevar, and (3) Korangumudi Estates	1½ cwt.
	56¾ cwt.

B. CASH DONATIONS, IN LIEU OF COFFEE

Rs. 100 from the Mysore Planters' Association (Inc.)	Rs. 100
Rs. 50 each from (1) Mr. L. P. Kent, (2) Mr. H. S. Northey, (3) Mr. E. W. Simcock, and (4) Jumboor, (5) Anoor and (6) Vaniah Estates	Rs. 300
Rs. 31 from Goorghully and Hosshully Estates	Rs. 31
Rs. 25 each from (1) Mr. E. N. Whittaker, (2) Mr. A. L. Hill, (3) Mr. E. R. W. Walker, (4) Dharmapravartha M. L. Nagappa Setty, (5) Mr. J. H. Jeffrey, (6) Mr. M. J. Simon, and (7) Horoor, (8) Karrie Kollie, (9) Kil Kotagiri, (10) Cotacadoo, (11) Attur, (12) Wooligooly and (13) Huvinakadu Estates	Rs. 325
Rs. 20 from Mr. Ivor Bull	Rs. 20
Rs. 17-10 from Indian Coffee Cess Committee Propaganda staff	Rs. 17-10
Rs. 15 each from (1) Sandalwood, and (2) Kurdior Estates	Rs. 30
Rs. 10 each from (1) Mrs. E. N. Whittaker, (2) Mr. A. C. Thimiah, and (3) Emerald Valley and (4) Carolina Estates	Rs. 40
Rs. 5 each from (1) Major D. N. Pitcairn, (2) Mr. M. P. Appayya, and (3) I.C.C.C. staff at Headquarters	Rs. 15
	Rs. 878-10

TEA QUOTA PRICES

The Quota prices ruling in South India on 8th May were:—

Tea Export Quota ...	5 annas 10 pies per lb.
Internal Market Rights ...	1 pie per lb. (Nominal).

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 28th April were:—

Rubber, including export licenses ...	51.00 cents a lb.
Rubber Export Quota	19.50 cents a lb.
1st quality rubber alone	33.00 cents a lb.

AVERAGE PRICES OF COMMON TEAS—MARCH 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	6	0	8	2
Tanjore	0	8	9	0	9	5
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	9	0	9	3
Tiruvarur	0	8	6	0	9	3
Pudukottah	0	8	0	0	8	5
Karur	0	8	5	0	9	6
Erode	0	8	2	0	8	9
Tiruchengodu	0	8	3	0	8	9
Namakkal	0	8	5	0	8	10
Salem	0	8	1	0	8	9
Dharmapuri	0	8	2	0	8	7

EMERGENCY TEA CONTROL

TEA CHEST LININGS

The following letter dated 24th April has been received from the Tea Controller:—

‘I write to inform you that the Ministry of Food have now confirmed that in cases where departure from the method of packing during the basic period may be necessary, substitution of lead linings, percentage 1.7 ozs., may be resorted to with paper lining between the lead and the tea.

‘A point that arises out of such substitution is in respect of Contract Teas *en route* to the United Kingdom which may, under the terms of substitution of teas for export, be withdrawn before arrival and diverted to America.

‘It is understood that the importers in the American markets will not accept lead linings, but this is a matter for the consideration of those exporters to such markets, who avail themselves of the alternative of lead for aluminium and have applied for the diversion of Contract Teas.’

RUBBER—SHIPMENTS FROM PRODUCING COUNTRIES

	1937 Tons	1938 Tons	1939 Tons
Malaya	470,000	372,000	376,750
Ceylon	70,500	49,500	61,000
India	9,750	8,500	9,250
Burma	7,250	6,750	6,500
North Borneo	13,250	9,500	11,850
Sarawak	26,000	17,750	24,000
Dutch East Indies	431,750	298,000	372,500
Indo-China	43,500	59,250	65,250
Thailand	35,500	41,500	41,250
Brazil	16,250	15,500	16,000
Wild	16,050	16,650	20,850
	1,139,800	894,900	1,005,200

MARKET REPORT AND PRICES

The Calcutta Market

RUBBER.—London Rubber on May 7, 1940, 11¾*d*.

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

SOUTH INDIAN TEA

	Sales on Apr. 23 & 30, 1940
Bengorm	65
Brooklands	65/70
Chamraj	68
Connemara	61
Kil Kotagiri	75
Manalaroo	63
Mount Stuart	65
Pachaimallai	67
Selaliparai	75

SOUTH INDIAN TEA (*contd.*)

	Sales on Apr. 23 & 30, 1940
Singara	69
Velonie	70

RUBBER

	Sale on Apr. 25, 1940
Ribbed Smoked Sheet ...	53
Contract Crepe ...	52½
Mottled Brown Latex Crepe	50 to 51½
Brown Scrap Crepe ...	50 to 51

The Madras Market

Current on 9th May, 1940

Very dull markets have been the order of the day in Bombay, Calcutta and Madras since our last report a fortnight ago. The one outstanding feature has been the continued strength in the Gilt Edged market following the lead from London. In spite of the setback in Norway and fears of an extension of hostilities to the Mediterranean and possibly Balkan States, the sterling Gilt Edged market has remained remarkably firm and further strength has been seen following the debate on Tuesday the 7th May in the House of Commons. 3½% war loan is quoted at £101¼ which is the highest for a considerable time.

Rubber.—During the past three days, the price of Spot rubber in London has appreciated by ½*d.* to 11½*d.* It is difficult out here to account for this rise but it is possible that the rapid decline in the sterling dollar Cross Rate in New York may be partly responsible. Very little business has been transacted in local rubber shares; but it is very evident that the supply of rubber shares at current quotations is very limited and any broadening in demand would result in a general rise. In fact, quite a number of shares closed above their lowest. Cochin Malabars were firmer at Rs. 6-4 as. A rise has been noticed in most of the A. V. Thomas group, Kalpettas changing hands at Rs. 17-2 as., and Velliamuttams at Rs. 16-4 as. Midlands were unchanged at Rs. 4-5 as., but Tropicals were bid higher at Rs. 16¾. Among the older companies, Vaikundams were neglected at Rs. 6-8 as., while Thirumbadis were freely offered at Re. 1-10 as. One isolated deal was put through in Malankaras at Rs. 35 with likely sellers over. Reports from the Straits and London show equally stagnant conditions in the rubber section, and it looks as if the share of an average rubber company is now rated for a minimum yield of 10%. No business was reported in sterling shares, but Rani-Travancores have announced a 5% final dividend for the year, the closing price being 11*sh.*, ex dividend. Malayalam Plantations were slightly lower at 31/3*d.*, but Kerala Calicuts were unchanged at around 1/4½*d.*

Teas.—This section was generally steady. Prices show little to no alteration. Chembra Peaks turned buyers at Rs. 3-4 as., and at the close there were unsatisfied buyers. Peermades were wanted at Rs. 26¼ and Periakaramalais at Rs. 17-4 as. Vellamalais had good buyers at around Rs. 10 while United Nilgiris gained a rupee at Rs. 110. Kalasa teas have been in keen demand, closing at Rs. 5-6 as. Among fixed interest securities, Ouchterlony Valley debentures were taken off the market at Rs. 102. There were buyers for Kalasa tea debentures at Rs. 103 and Fringford 7% debentures at Rs. 104. A few deals were recorded in Nilgiri Neerugundi preferences at Rs. 75-4 as.

FORTNIGHTLY RAINFALL STATEMENT

April 14, 1940 *to April* 27, 1940—(*Inclusive*)

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	1·89	...	...	...
3. Kallar B'dge	0·09	4·18	0·29	4·56
4. Koney ...	3·11	4·25	3·52	10·88
8. Twyford ...	3·17	4·85	0·51	8·53
9. Pettimudi ...	1·02	5·76	1·75	8·53
10. Kalaar ...	1·40	3·48	1·97	6·85
11. Chittavurrai...	2·90	2·19	1·48	6·57
12. BODI'KANUR ...	0·30	4·33	1·10	5·73
13. COCHIN ...	0·69	3·15	1·78	5·62
14. Mooply ...	2·06	2·20	3·17	7·43
15. Pachaimallai	0·22	4·16	0·78	5·16
16. Mudis ...	2·45	3·08	1·88	7·41
17. POLLACHI ...	...	3·35	...	3·35
18. Ropeway Waterfall ...	0·27	5·48	0·34	6·09
21. Kerala Estate	1·98	2·36	3·14	7·48
22. Naduvattam	...	4·06	0·64	4·70
24. Coonoor ...	...	4·20	5·06	9·26
25. Kotagiri ...	...	3·03	3·79	6·82
26. Ootacamund...	...	3·39	0·87	4·26
27. Yercaud ...	...	1·43	...	1·43
30. Devarshola T.E.S. ...	0·22	2·81	0·24	3·27
31. CALICUT ...	...	0·50	...	0·50
32. Kuttiyadi ...	...	...	...	...
33. Vayitri ...	...	4·66	0·25	4·91
34. Manantoddi...	...	3 56	...	3·56
35. Bilgiris ...	...	3·14	0·52	3 66
38. Pollibetta ...	0·06	1·43	0·47	1·96
39. Coovercolly ...	...	4·39	0·22	4·61
41. Kadamane ...	0 09	4 51	0·34	4·94
43. Merthisub'gey	...	3·22	0·20	3·42
45. Balehonnur ...	...	2·21	0·15	2·36
46. MANGALORE ...	...	0·52	...	0·52
47. MADRAS ...	...	0·48	...	0·48

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

In the *Rubber Research Institute Bulletin*, No. 10, for April 1940 there are some rather interesting comments on an article by Dr. H. P. Stevens on the subject of 'Synthetics and Substitutes' which appeared in the *Bulletin of the Rubber Growers' Association*, Vol. XXI, No. 7. (This article was reproduced in the *Planters' Chronicle* for 25th November 1939.) Dr. H. P. Stevens in the course of his article suggested that instead of endeavouring to endow natural rubber with properties it did not have and seemed unlikely to acquire, attention should be concentrated on reducing the cost of production and finding and developing new markets for natural rubber. He commented on the fact that there did not seem to have been a single radical change in production methods, latex excepted, in the past 25 years, and wrote as follows:—

'The whole of what has been done is limited to detailed improvements, in bulking, coagulating, machining, drying, smoking and packing. Latex is still transferred to tanks where it is coagulated and from which it has to be removed by hand labour and transferred to machines where it is rolled and washed, each sheet individually. Then again handled and transferred to drying houses or smoke houses where it is again hung by hand, removed by hand and finally packed by hand. The actual operations are the same today as when originated by the pioneers. The whole of the operation resembles in many respects the mediaeval process of paper-making. May I suggest that it should not be necessary to wait hours for latex to coagulate or days for the coagulum to dry. The whole process might possibly be made continuous. If the coagulum were thin enough, the coagulation and drying could be effected sufficiently rapidly for a continuous process.'

The Rubber Institute of Malaya, while fully agreeing with Dr. Stevens' second suggestion, the development of new uses for rubber, considers his criticism of production methods less convincing. It admits that the principle of production methods is the same today as in pre-war days, but points out that the reason no radical change in procedure has been made is because no better general principle has been evolved.

As regards raw rubber production, the Bulletin gives the following F.O.B. costs per pound for five different estates:—

	F.O.B. *Cents*	*Manufacturing* *Cents*	*Tapping* *Cents*
Estate A ...	14.22	0.54	3.55
Estate B ...	10.81	0.42	2.98
Estate C ...	13.43	0.69	3.13
Estate D ...	11.17	1.10	3.40
Estate E ...	18.21	1.28	3.31

Estates A, B and C have modern sheeting batteries.

Estates D and E have old-fashioned side-by-side machines and mill their own lower grades.'

It is pointed out that the average manufacturing cost for the above five estates is 0.81 cents per lb. (approx. one-fifth of a penny) and for the three modern estates 0.55 cents per lb. (approx. one-eighth of a penny), from which it can be seen that even a radical change in the method of manufacture, which would entirely eliminate the manufacturing cost, would have a negligible effect on the cost of rubber so far as competition with Synthetics was concerned. The Bulletin continues:—

'It is immaterial if the latex does have "to wait hours to coagulate and the coagulum days to dry." An estate factory is built to treat a certain quantity of latex, which is limited to the amount coming in from the estate daily. It is possible to coagulate the latex within a few minutes, but no advantage would be gained. As long as the factory is capable of handling the latex which has to be treated in an economical manner, this is all that is required. The present process is continuous though probably not in the sense meant by Dr. Stevens. Every day a certain amount of latex is brought into the factory and every day approximately the same quantity of sheet is removed from the drying house. The German synthetic product, "Buna", is made by coagulating the artificial Buna latex by a continuous process, and is washed and dried in the form of a broad thin ribbon.

'No obvious advantage would be gained in treating natural latex in the same way. The position would be different if latex were coming in from the estate continuously day and night. With Buna, however, that is the position: there is a "production density" much higher than on the plantation and the whole process is continuous, so it is obviously an advantage that the drying process should be continuous also. Unless the coagulum were disposed of quickly a large amount of latex storage space would be required. Further, in a process of this nature where energy consumption is such an important factor, that required for drying in a mechanical plant would be a comparatively small item in the total expenditure.

'Thus, although improvements in the methods of converting latex to dry rubber on the estate are still possible, and may be expected to occur from time to time, the cost of the present methods is so small that they cannot be said to be of much importance in relation to the relative competitive positions of natural and synthetic rubber.'

DISTRICT NOTES

WYNAAD

Minutes of the Liquidator's Meeting of the Wynaad Planters' Association held at Meppadi Club on Wednesday, the 24th April 1940, at 3 p.m.

Present.

Messrs. J. A. Gwynne, I. W. Finlayson, H. S. Lake, R. W. M. Hay, C. E. A. Ewart and B. St. J. Boultbee (*Liquidator*).

The Notice calling the meeting was read.

Liquidator's Report and Accounts.—Mr. B. St. J. Boultbee read his Accounts and Report as Liquidator.

Proposed by Mr. I. W. Finlayson and seconded by Mr. H. S. Lake:—

'That the Liquidator's Report and Statement of Accounts be and hereby are adopted.' *Carried unanimously.*

B. ST. J. BOULTBEE,
Liquidator.

WYNAAD

Minutes of the Annual General Meeting of the Wynaad Planters' Association held at Meppadi Club on Wednesday, 24th April 1940, at 3-30 p.m.

Present.

Messrs. J. A. Gwynne (*Chairman*), D. Bate, B. D. Darkin, C. E. A. Ewart, I. W. Finlayson, R. W. M. Hay, H. S. Lake, and B. St. J. Boultbee (*Honorary Secretary*).

Visitors.—Messrs. A. G. Acaster, R. A. McKay and D. T. Merson.

The Honorary Secretary read the notice calling the meeting.

Ordinary Business.—

1. Minutes of the last Extraordinary General Meeting having been published in the *Planters' Chronicle* were taken as read and confirmed.

2. *Annual Reports and Accounts*, 1939-40.—The Honorary Secretary read his report as follows:—

Gentlemen, I have to submit the following report for 1939-40.

Meetings.—There were six General Meetings and three Committee Meetings, the average attendance at each being 13.3 and 4.6 respectively.

Membership.—The total acreage subscribing during the year was 11,023 acres composed of 17 estates. Of this acreage 10,963 acres were under Tea and 60 acres under Rubber.

The same acreage will subscribe for the season 1940-41.

The Personal Membership remains the same as last year, i.e., one.

Tea Crop.—The acreage in plucking was 10,760 acres which yielded a total crop of 6,261,034 lbs. of made tea or 581.88 lbs. per acre against a yield of 563.47 lbs. in the previous year.

Prices.—Prices were satisfactory. Since the outbreak of war most of our teas have been taken by the Food Controller at fixed prices.

Roads.—

Calicut-Ooty Road.—Owing to the deplorable condition of a section of this road, which is maintained by the District Board, the Nilgiri-Wynaad P.A. have decided to bring forth a resolution before the Annual General Meeting of the U.P.A.S.I. to request the P.W.D. to take over the repairs and maintenance of the whole of this road.

The Nilgiri Planters' Association, Malabar Chamber of Commerce, and our Association have promised to give full support to their resolution.

Vayittiri-Manantoddy Road.—The District Board have been requested to examine the above road for repairs and rebuilding of bridges and necessary maintenance. The District Board Engineer has written that the work is on hand from Tharavanna side and will be completed as funds become available.

Other Local Fund roads have generally been maintained in their usual moderate condition.

Ministers' Visit.—The Hon. Mr. V. V. Giri, Minister for Industries, the Hon. Mr. V. I. Muniswamy Pillai, Minister for Agriculture and Rural Development, and Mr. V. Ramakrishna, Labour Commissioner, visited the District in June and addressed a meeting of this Association on 20th June 1939.

Scientific Officer's Visit.—Mr. J. D. Manning, Scientific Officer, U.P.A.S.I., visited the estates in June and addressed a meeting of this Association.

S.I.P.B. Fund.—A total amount of Rs. 695 was subscribed or donated by the District as against Rs. 685 in 1938-39. This was recovered from 17 estates, 17 members and the Association. The response from individual members is still disappointing, only 17 having donated out of a possible 25.

Wynaad Malarial Survey.—The subscribing acreage was 16,447 acres. Out of this, Arthala Estate (430 acres) has resigned and will not be subscribing for the coming season, as they have decided to open a branch of the Ross Institute in their district.

Dr. Ramsay, Deputy-Director of the Ross Institute, visited the District in May 1939, and examined the work done by our Ross Institute Research Centre.

Sir Malcolm Watson, Director of the Ross Institute, accompanied by Dr. Ramsay, visited the District during the first week of February 1940 and inspected the anti-malarial measures carried out by the estates in the District.

Allowance has been made in next season's budget for an Assistant Entomologist to give enough time for the present Entomologist to attend to field works.

Thanks are due to Malayalam Plantations Ltd., through the Honorary Secretary and Committee of the W.M.F., for the continued use of accommodation and equipment at Moopenaad Central Hospital.

Thanks are also due to Dr. G. C. Ramsay, Dr. J. E. Measham, and Dr. T. K. Govindan Nair for their services in maintaining the survey.

Winding up of the Association.—It was decided to disincorporate the Association and the necessary steps have been taken to wind up the Incorporated W.P.A., and to start the new unregistered W.P.A.

General.—Owing to the war it is impossible to say what the future will bring forth. Many of our members will doubtless be required for Military Service, should the war continue any length of time. So far Mr. B. W. Harvey is the only one to be called and we wish him luck and a safe return.

In conclusion, I wish to express my thanks to our Chairman, Mr. Gwynne, and members of the Committee for their help and advice.

I now tender my resignation.

Proposed from the Chair 'That the Accounts and Report for the year ending 31st March 1940 hereby be adopted.' *Carried unanimously.*

Proposed by Mr. Hay and seconded by Mr. Lake, a hearty vote of thanks to the Chairman, Honorary Secretary and the Committee for the way in which they had carried out their duties during the year. *Carried unanimously.*

W.P.A. Budget and Cess, 1940-41.—Proposed from the Chair 'That the budget be accepted and that the W.P.A. Cess for 1940-41 be fixed at 1¼ annas per acre.' *Carried unanimously.*

Ross Institute Budget, 1940-41.—Proposed by Mr. B. St. J. Boultbee and seconded by Mr. I. W. Finlayson 'That the Ross Institute budget be revised and discussed at a later meeting.' *Carried unanimously.*

Election of Office-Bearers for 1940-41.—The following gentlemen were elected:—

Chairman and Hon. Secretary.—Mr. J. A. Gwynne.

Committee Members.—(In addition to Chairman and Hon. Secretary *ex-officio*), Messrs. B. D. Darkin, F. H. Farmer, R. W. M. Hay and H. S. Lake.

District Labour Committee.—Proposed from the Chair 'That the Association's Committee be the District Labour Committee for 1940-41.' *Carried unanimously.*

It was proposed from the Chair 'That the Chairman and Honorary Secretary be appointed delegates to the U.P.A.S.I. Annual General Meeting 1940.' *Carried.*

Auditors.—It was proposed from the Chair 'That Messrs. N. C. Rajagopal & Co. be approached with a view to getting some reduction in their fees for auditing the Accounts; now that the Association is no longer incorporated.' *Carried.*

Special Business.—

Renewal of Fixed Deposit.—Mr. B. St. J. Boultbee proposed and Mr. I. W. Finlayson seconded 'That the Honorary Secretary be requested to re-invest Rs. 1,000 of the money lying in fixed deposit for a further year at the best rate of interest compatible with sound security.' *Carried.*

Wynaad Malarial Survey Committee.—The following gentlemen were elected:—Chairman and Honorary Secretary, and Messrs. B. D. Darkin, R. W. M. Hay and H. S. Lake.

Correspondence.—

Read letter re. Labour Department Bye-Laws dated 15-4-40. The matter was discussed and the Honorary Secretary was instructed to reply for the Association.

Read correspondences from the Nilgiri-Wynaad P.A. re. Calicut-Ootacamund Road.

'Resolved that owing to the deplorable state of this road, the Government be requested to hand over the Choladi-Ooty section of the Calicut-Ootacamund Road to the P.W.D. for improvement and maintenance.'

Proposed by Mr. I. W. Finlayson and seconded by Mr. H. S. Lake. *Carried unanimously.*

Read letter from the Secretary, U.P.A.S.I., regarding a request received by the Commissioner of Tea Market Expansion Board from the Techno Chemical Industries Ltd., Calicut, re. free distribution of tea to their factory workmen.

It was decided to refer the matter to the Companies.

Read Finnish Relief Fund Appeal from C. G. Alexander, Esq., Hon. Vice-Consul for Finland, Madras.

There being no other business to transact, the meeting terminated with a vote of thanks to the Chair.

J. A. GWYNNE,
Chairman.

B. ST. J. BOULTBEE,
Hon. Secretary.

MALABAR

Minutes of the General Meeting held at the Malabar Club, Calicut, on Friday, 29th March 1940, at 10-30 a.m.

Present.

Members.—Messrs. R. G. de R. Norman (*Chairman*), Jas Grundy (*Secretary*), T. L. Jackson, T. R. Ramaier, W. Black, C. Thorne and G. Q. Archard (by proxy).

The Honorary Secretary read the notice calling the meeting.

Minutes of the previous meeting held on 4th August, copies of which had been circulated to the members, were taken as read and confirmed.

Accounts for the year were passed, having nothing of controversial nature.

Food Price Control.—The Honorary Secretary who had approached the Collector in the matter, received a reply from him that Advisory Committees had been constituted for all the Taluks and Districts, with the Divisional Revenue Officer as the Chairman and the Tahsildar as the Secretary, and it was suggested that estates should get into touch with the Taluk Advisory Committee through the Revenue Divisional Officer.

War Charities.—It was settled that members subscribe direct.

U.P.A.S.I. Budget Meeting.—It was decided not to send any representative to the meeting to be held in Coonoor on 6th April.

Election of Office-Bearers for 1940-41.—Mr. Norman was re-elected as Chairman. (Proposed by Mr. Jackson and seconded by Mr. Ramaier.)

Mr. Ramaier as Secretary in place of Mr. Grundy who resigned. (Proposed by Mr. Jackson and seconded by Mr. Grundy.)

Messrs. Jackson and Thorne as Committee Members.

Mr. Grundy was thanked for his very valuable services during the year.

Malarial Research.—It was decided that a deputation consisting of Messrs. Jackson, Archard and Mortimer should approach the Chairman of the District Board and find out what he intended to do in this regard.

There being no other business, the meeting was closed with a vote of thanks to the Chairman and the Members of the Malabar Club for the use of their premises.

R. G. de R. NORMAN, *Chairman.*

T. R. RAMAIER, *Secretary.*

SOUTH TRAVANCORE

Minutes of the Thirty-second Annual General Meeting of the South Travancore Planters' Association held at the Kaithuritty Valley Club on Saturday, 20th April 1940, at 10 a.m.

Present.

Messrs. A. P. D. Lodge (*Chairman*), T. W. C. Park, P. E. D. Cameron, J. R. N. Pryde, A. W. Leslie, G. Green, L. S. Knox (*Honorary Member*), and W. Gillespie (*Honorary Secretary*).

By Proxy.—Messrs. H. R. C. Parker and A. H. L. White.

The proxies were examined and found to be in order.

The Chairman opened the meeting with the following address and in conclusion called upon the Honorary Secretary to read the notice calling the meeting.

CHAIRMAN'S ADDRESS

'Since our last meeting we have received news of the death of Mr. R. Ross. He was a member of the P.A. at its incorporation in 1909 and was one of our pioneer planters, being Manager of Poonmudi Group until 1925 when he retired. I propose that our Honorary Secretary be asked to convey our sympathy to Mrs. Ross and family.' He also asked the meeting to record the death of Mr. Ross in the usual way.

'This last year has been a momentous one and I propose briefly to mention the events that have occurred.

'Firstly I refer to the outbreak of war, which has already had an effect on our Tea and Rubber Industry. Prices so far have been satisfactory and the Government control arrangements appear to be working quite satisfactorily. Three of our members have already volunteered and are now undergoing training at Belgaum. Others are expecting to go within the next few months. May we all wish them every success and a safe return.

'The situation in India has given rise to much anxiety. The whole of India is more or less unanimous in their hatred of Nazi methods, and assistance is forthcoming from all over the country. It is, however, unfortunate that Congress insists in its present attitude. Unless they were so confident in the Allies' ultimate victory, they would surely more fully realise the harm they are doing to India's real interests by their present attitude.

'The completion of the Cochin Port Scheme is an event of interest and importance to all.

'The severe drought which follows an equally serious one last year has caused further damage to crops and the present position is most worrying. There are benefits, however, to be derived at the same time; Helopeltis was very definitely less severe in 1939 as the result of the prolonged dry weather, and malaria was practically non-existent. Let us hope that these conditions will prevail during 1940.

'Labour position is satisfactory; cost of living has not risen as much as we at one time anticipated. There has been a very definite improvement in health as the result of measures taken on all estates in our Association.

'Dr. Ramsay's annual visits to S. India have been of very great assistance in our anti-malarial campaign, and we look forward to seeing him again in 1940.

'Sir Malcolm Watson's visit was an event of note and most of us were fortunate to be able to attend a lecture he gave at the Kalthuritty Valley Club, last January.

'Before closing, may I mention the scheme to obtain subscriptions asked for under the U.P.A.S.I. War Fund. You have all had copies of the appeal. The suggestion is that every member subscribes one half day's pay and we might, later on in this meeting, discuss the best method of collection.' '

The Honorary Secretary then read the notice calling the meeting, particularising the agenda.

Confirmation of Minutes of the last Annual General Meeting.—The Minutes of the last Annual General Meeting held on 13th May 1939 were published in the *Planters' Chronicle* and circulated to all members, and on the call of the Chair, the Honorary Secretary read items of importance upon which discussions followed and explanations asked for were given as follows:—

Telegraph Office at Tenmalai.—It was suggested that the Honorary Secretary again write and ask for confirmation that cables and telegrams addressed to Tenmalai will be accepted at all post offices outside India.

The subject of 'Conditions on roads in and around Punalur' was discussed and the Honorary Secretary was requested to remind the P.W.D. that the section referred to last year might again be the subject of early consideration, as it is feared that the road will become impassable unless metalling is immediately carried out. The only alternative route *via* Kolatupuzha and Anchal would involve an extra 15 miles.

The confirmation of the Minutes was then proposed by Mr. Park and seconded by Mr. Cameron.

Accounts and Balance Sheet.—The Honorary Secretary presented to the meeting the Accounts and the Balance Sheet for the year ended 31st March 1940 and read the Auditor's Certificate. These were found to be in order and the adoption was proposed by Mr. Pryde and seconded by Mr. Cameron.

Report of Committee of Management for 1939-40.—On the call of the Chair the Honorary Secretary read the report of the Committee of Management for the year 1939-40.

The adoption of the report was proposed by Mr. Green and seconded by Mr. Pryde.

Election of Office-Bearers for 1940-41.—The Chairman, Mr. A. P. D. Lodge then tendered his resignation and that of the other office-bearers and Mr. Pryde was asked to occupy the Chair and conduct the balance of the Ordinary Business.

The election of office-bearers then took place.

Mr. Pryde called for the election of a Chairman.

Mr. A. P. D. Lodge was proposed by Mr. Park and seconded by Mr. Gillespie, and Office was accepted.

Honorary Secretary.—Mr. Green was proposed for the office of the Honorary Secretaryship by Mr. Gillespie and seconded by Mr. Park and Mr. Leslie.

Mr. Green accepted the Office.

A ballot was then taken for three members of Committee resulting in the following election:—Messrs. Parker, Park and Cameron.

Election of Auditor for 1940-41.—The Auditor for the year ending 31st March 1941 was Mr. G. Ramalingam Iyer who offered himself for re-election. Re-election of this Auditor was unanimously agreed upon and the Honorary Secretary was instructed to send the usual notification to the Auditor.

This concluded the Ordinary Business of the meeting and Mr. Lodge returned to the Chair and on resumption thanked Mr. Pryde for his office during the elections.

Special Business.—

Budget for 1940-41.—Copies of the budget for 1940-41 were circulated to all members.

The adoption of the budget was proposed by Mr. Pryde and seconded by Mr. Park. *Carried unanimously.*

Association of Planters of Travancore.—On the call of the Chair, Mr. Park who is an Executive Committee Member of the Association spoke briefly of the work which this Association is carrying on and it was interesting to note that already the subscribing acreage exceeded 100,000 acres. It was pointed out that this Association no longer received copies of the interesting reports of the Legislative Members, and the Honorary Secretary was asked to make enquiry regarding this.

Rates of Pay.—This item was discussed in 'In Committee'.

U.P.A.S.I.—The only items of interest to this Association under this heading were:—

(*a*) That a complete Census of working coolies on all estates has been collected.

(*b*) That a statement of labour requirements on tea estates had also been obtained resulting as follows:—

Venture Valley Estates ...	3 coolies for 4 acres.
Rani District Estates ...	6 to 7 coolies for every 10 acres.
Poonmudi District Estates ...	¾ cooly per acre.

(*c*) *U.P.A.S.I. War Fund.*—The Chairman addressed the meeting on this subject and discussion ensued as to appropriate means of collection of funds and direct allocation to the various branches to suit subscribers' wishes.

The Honorary Secretary was instructed to notify the U.P.A.S.I. that this P.A. would be willing to carry out collections and also to enquire if such funds or portions thereof could be earmarked by individuals for special donation for Home Services.

The Honorary Secretary was also asked to circulate members to find out if they would be willing to subscribe through the P.A. and also to enquire what their particular wishes would be.

Correspondence.—

Draft Articles of District Associations.—Copies of the draft Articles of the Association amended slightly to suit the S.T.P.A. were discussed along with the suggestion to widen the scope of the registered office of the Association which has always been confined to Quilon.

Discussion followed on the advantages and disadvantages of remaining an Incorporated Association. Before taking the necessary steps to have the new Draft Articles adopted, it was decided that the Honorary Secretary should make enquiries regarding the procedure of winding up the present Incorporated Association and re-commencing as an unincorporated body, and also to obtain the views of all members.

The following items of correspondence were fully dealt with in the Committee's Annual Report and called for no further discussion:—Elephant damage; Vadaserikara Mails and Halt Station at Kalthuritty.

Any Other Business Properly Brought Before the Meeting.—No other business having been properly brought before the meeting, the Chairman declared the meeting closed adding a vote of thanks to the Committee of the Kalthuritty Valley Club for accommodating the meeting.

A. P. D. LODGE,
Chairman.

W. GILLESPIE,
Honorary Secretary.

COORG

Minutes of the Annual General Meeting of the Coorg Planters' Association held in the North Coorg Club, Mercara, on Friday, 26th April 1940, at 11-30 a.m.

Present.

Mr. Ivor Bull, M.L.C. (*Chairman*), Dewan Bahadur K. Chengappa, B.A., Rao Sahib M. S. Mandanna, Rao Sahib P. A. Chengappa, Messrs. G. Scotland, B.SC., J. F. Mackintosh, M.C., G. M. Brameld, J. Aird, J. S. Youngman, W. G. L. Parsons, B. S. Bucknall, S. P. O. D. Tipping, E. R. W. Walker, H. J. Cheesley, F. N. Betts, R. W. J. Egerton, J. O. F. Maurice, Abdul Rahaman Khan, A. C. Thimiah, C. N. Subramanian, P. R. T. Punja and C. L. J. Humphreys (*Honorary Secretary*).

Visitor.—J. W. Pritchard, Esq., I.C.S., Commissioner of Coorg.

Minutes.—The Minutes of the Extraordinary General Meeting held on 22nd January 1940, having been published in the *Planters' Chronicle*, were taken as read. The Honorary Secretary read the 'In Committee' items. The Minutes were then confirmed and signed.

CHAIRMAN'S ADDRESS

In his opening remarks the Chairman referred to the conflict into which the world had been plunged. He stated that three Coorg Planters, Messrs. A. M. Webb, A. Breithaupt and Philip Tippetts-Aylmer, were now on active service and that Messrs. D. B. Harrel, D. O. Scholfield and F. G. Foster were in training at Belgaum. He wished them Godspeed and a safe return. He referred to the appointment of a Panel of planters to assist in the management of estates whose owners were on active service and he made a special appeal to those who remained behind to subscribe generously to the U.P.A.S.I. War Fund. Several members who were going on active service had left Banker's Orders covering this Fund.

Few, he thought, would say good-bye to the year 1939 with regret. The coffee crop was one of the lowest on record and at the time when forward sales were being arranged the market was so disturbed that very low rates were expected and fixed. He hoped that better things were ahead.

Mention was made of the Committee's Report, which had been previously circulated. An omission had occurred among the list of representatives which should have included the name of Mr. J. H. Sprott. Mr. Sprott had been selected by Government to represent Coorg on the I.C.A.R. and by the U.P.A.S.I. to represent them on the Indian Coffee Cess Committee. He was also on the Governing Body of the Experimental Station at Balehonnur.

The year 1939 had been a busy one. Many new problems had arisen, but it had been a great encouragement to notice the continued interest shown in Coorg by the Central Government. The Chairman felt that after successive visits from Central Government officials, the agricultural needs of the Province were better known than ever before. He was confident too that as a result of this interest those needs were at last going to be adequately catered for.

He regretted that although the subscribing acreage in Coorg had again shown an increase, it still only represented just over 50% of the total coffee acreage in the Province. He hoped that if prices improved a substantial increase would take place and he trusted that pending resignations would be re-considered and withdrawn. He also appealed to C.P.A. members who were not at present members of the U.P.A.S.I. and asked them to consider joining that body. He hoped that they would also join the Coffee Product Section. The fruits of Mr. Mayne's work were available to all but it was unsatisfactory that in spite of his voluntary cut in salary, the Scientific Department was still being run at a loss.

In conclusion the Chairman placed his resignation before the meeting and thanked the Committee for their assistance during the past year. He also wished the new Chairman and his Committee the best of success for 1940-41.

ANNUAL ACCOUNTS AND COMMITTEE'S REPORT

The following is the report of the Committee of the Coorg P.A. for the year 1939-40:—

Membership.—It is with satisfaction that the Committee is able to record a further increase in membership for the year 1939-40. There are now 38 full members, 49 small owner members, 4 Firm members and one personal member. These represent 14,425 acres of Coffee, 1,478 acres of Rubber, 362 acres of Tea and 170 acres of Minor Products. The total of 16,435 acres shows an increase of 589 acres over the preceding year.

Committee.—The Committee consisting of the undersigned has remained unchanged throughout the year.

Representation.—Our representatives for the year have been:—Lt.-Col. H. F. Murland on the Indian Coffee Cess Committee, Mr. Ivor Bull on the Executive Committee of the U.P.A.S.I., Mr. Ivor Bull and Mr. G. Scotland on the Coffee Product Section Committee and Mr. C. L. J. Humphreys on the Labour Control Committee.

Meetings.—During the year five Committee and four General Meetings have been held. The average attendance being 6 and 18 respectively.

Work at the Office.—The Office has dealt with 2,118 letters.

S.I.P.B. Fund.—Donations to this Fund totalled Rs. 685. The decrease of Rs. 112 during the year is almost entirely due to the departure for England of several regular subscribers. The dependants of two former members of this Association were among those to receive help.

Accounts.—The Accounts for the year 1939-40 have been audited and appended hereto. These show an excess of income over expenditure of Rs. 213-5-4. This excess includes a sum of Rs. 151-15-10 which was transferred from the Coorg Scientific Officer's Fund to General Revenues. It will be seen that the Reserve still stands at the sum of Rs. 2,100.

Items of General Interest.—

(i) *Coffee Husk.*—As a result of representations made by the Committee, a Bill prohibiting its export from the Province was passed by the Coorg Legislative Council during its October Session. The increased consumption of coffee husk in recent years has had a deleterious effect on the sales of the lower grades of coffee. The passing of this Act in Coorg and similar legislation in Mysore together with the promise of the curers to either destroy Cherry coffee husk, or to render it unfit for human consumption, should ensure that this material no longer competes for sale with coffee.

(ii) *Coffee Quality Investigation.*—A scheme for the investigation into the quality of coffee was drawn up by the Imperial Council of Agricultural Research and put into operation during the year. The Association made representations to the Chief Commissioner and it was finally agreed that the Coorg Government should contribute towards the scheme and thus enable Coorg Planters to benefit from the results obtained.

(iii) *Diet and Malnutrition in Coorg.*—The Association was requested to make suggestions for the carrying out of recommendations on diet and malnutrition submitted to the Coorg Government by Dr. Aykroyd, Director of Nutrition Research. A memorandum was prepared and sent in to Government.

(iv) *Visit of the Agricultural Commissioner of the Government of India.*—The visit of Dr. Burns to Coorg in October was possibly the most important event during the year. Advantage was taken of it to put forward the Association's views regarding the development of an agricultural policy in Coorg, and in particular the development associated with our own crops.

Notes were prepared for him regarding the Coffee Loan, Coffee Borer, Gonikoppal Cattle Market, and Scientific Research in Coorg, and copies of those notes were circulated to all members.

One result of his visit is a proposal from the I.C.A.R. that a five years' Research Scheme devoted to studying the Coorg Orange should be started in Coorg.

A draft scheme was sent to this Association, and later on the Committee's views on this scheme were asked for by Government and were given.

(v) *Coffee Borer.*—As a result of a resolution sent to the Coorg Government by the Association, the Pest Act is now more rigidly enforced and it is hoped that this will result in a reduction of loss by Borer.

(vi) *Coffee Loan.*—Owing to the general failure of this season's coffee crops in Coorg, representations have been made to persuade Government to postpone, in deserving cases, the collection of this year's loan instalment till 1941. The Central Government has also been pressed to extend the repayment period from three to six years.

(vii) *Motor Vehicles Taxation.*—As a result of the Association's request that private estate lorries should not be taxed at the proposed increased rates, there is reason to believe that a reduction in the proposed rate of taxation for these vehicles is likely to be affected.

(viii) *Profession Tax.*—The Association has made a strong protest against the proposed increase by 33⅓% in the taxation on non-agricultural incomes. It is as yet too early to give any definite assurance, but it is hoped that the proposed increase will not now take place.

(ix) *Visit of the U.P.A.S.I. Coffee Scientific Officer.*—Mr. Mayne visited Coorg again this year, and addressed meetings of planters at Shanivarasante, Somwarpet, Pollibetta and Mercara.

(x) *Profiteering.*—On the outbreak of war, prices in the local shandies, as in other parts of India, increased steeply. Your Committee took immediate action, and for several weeks the prices of all the principal commodities were collected in every shandy used by our labour, and sent in to the Coorg Government. The Government also took action, and the cost of living in Coorg is now approximately the same as at the outbreak of the war.

(xi) *Petrol Sales in Bulk.*—At the request of one of our members, the U.P.A.S.I. were addressed to find out why it was no longer possible to purchase petrol in 40 gallon drums in Mercara. The reply made it clear that this restriction is necessitated by law, and was not due to the action of the Company supplying the petrol.

(xii) *Other items* dealt with during the year were—additional nurse for Mercara Hospital, Telegraph Messenger for Pollibetta Post Office, land sales for recovery of Government dues, cinchona cultivation, bus service from Mercara to Ooty, night watchman, Mercara Hospital, rectification of Government acreage statistics, marketing of coffee, shipping transport of coffee in time of war, circulation of current rates of timber to all members, and revision of Planting Directory.

IVOR BULL ... *Chairman.*
J. H. SPROTT,
G. SCOTLAND,
R. W. J. EGERTON,
ABDUL RAHAMAN KHAN,
P. R. T. PUNJA,
and C. L. J. HUMPHREYS (*Hon. Secretary*).

The Annual Accounts and Committee's Report having been previously circulated, the Chairman proposed that they be adopted. This was carried unanimously.

Election of Auditors.—It was proposed by the Chairman and carried 'that Mr. B. Shamanna be re-elected auditor on the same remuneration'.

Election of Office-Bearers, 1940-41.—As only six names had been submitted for election to the Committee, there had been no ballot. The following would serve on the Committee for 1940-41:—

Mr. G. Scotland ... *Chairman.*
Mr. Ivor Bull,
Mr. J. F. Mackintosh,
Mr. Abdul Rahaman Khan,
Dewan Bahadur K. Chengappa, and
Mr. P. R. T. Punja.

Mr. Ivor Bull and Mr. C. L. J. Humphreys would **represent** the C.P.A. on the Coffee Product Section Committee.

U.P.A.S.I. Budget Meetings.—The Chairman and Mr. G. Scotland gave a short report on the proceedings of the Coffee Product Section budget meetings and referred to the special effort which is to be made to increase the acreage subscribing to the Section.

Mr. Humphreys spoke on the work of the Department and the future of the Mysore-Mangalore Division. He referred to the revision of the Bye-Laws and the limitation of debt recovery through the Department. A discussion took place as to whether a larger acreage would subscribe to the Department if there was no guarantee period. Eventually it was decided that the Honorary Secretary should press the Control Committee to renounce its policy of a further three-year guarantee period at least as far as Coffee was concerned.

Correspondence and Any Other Business.—

Registration of Births and Deaths.—A letter from the Commissioner on this subject was discussed. It was recommended by the Committee that estate managers should be responsible for the registration of births and deaths on their estates. It was decided that once a month all managers should fill in and return particulars for registration to the local Nad Offices. The Honorary Secretary was instructed to circulate notices to this effect.

The meeting closed with a vote of thanks to the outgoing Chairman proposed by Mr. G. M. Brameld and seconded by Mr. R. W. J. Egerton.

IVOR BULL, *Chairman.*

C. L. J. HUMPHREYS. *Honorary Secretary.*

SOUTH TRAVANCORE

In the address of the Honorary Secretary of the South Travancore Planters' Association published on page 200 of our issue dated 11th May the Estate should read 'Atchencoil' instead of 'Isfield'.

MYSORE

We regret that as a result of typing errors in this office the proceedings of the Mysore P.A. Meeting held on 21st March and published in the *Planters' Chronicle* of 27th April were incorrectly reported. The following corrections should appear in these proceedings, in supercession of the corrections on page 214 of the issue dated 11th May:—

Page 186, immediately after the letter dated 27th December 1939 from Messrs. Peirce, Leslie & Co., Ltd., in the paragraph headed 'Planters and Military Service', 'It was decided that the terms detailed were entirely satisfactory and that with the permission of Messrs. Peirce, Leslie & Co., Ltd., their letter should be published in the proceedings of the meeting and be sent to all employers in the Association.'

Page 188, at the conclusion of the proceedings, 'The Chairman proposed a vote of thanks to the members of the Kadur Club for the use of the Club Room.

'Mr. Kirwan proposed a hearty vote of thanks to the Chairman for all his work and for having agreed to act for another year.

'The Chairman then declared the meeting closed.'

WAGES AND HOURS OF WORK IN FRANCE

The following paragraph dealing with the present labour conditions in France extracted from an article by Sir Walter Layton appearing in a recent issue of the *Indian Finance* will be found interesting:—

'The most striking thing in France today is the readiness with which the policy of wage stabilisation has been accepted by the whole country including the Trade Unions. The working hours formerly limited to 40 a week have greatly increased, the most common figures perhaps in war factories being 60 hours. But instead of the additional hours between forty and sixty a week being paid for at special overtime rates, the workers only get 60 per cent of the normal standard rate of wages. Even this is not all. From the money wage calculated in this way, a further tax is levied, which amounts to 15 per cent in the case of men of military age, and 5 per cent for all other workers. The result of these deductions is that men are working 60 hours a week for the same wages in francs as they would have received for 42 hours before the war. And as retail prices have slightly risen, the purchasing power of these war wages is no higher than the wage of men who before the war were working a forty-hour week. Skilled workers, it is true, may do better than this on a piece work basis, but the preceding figures represent the situation for the mass of the workers.'

—*Industrial Bulletin.*

U. S. S. R. AND RUBBER

An interesting commentary on the use of synthetic rubber in tyres in the U.S.S.R. is found in a book entitled *Red Pilot. Memoirs of a Soviet Airman*, by Vladimir Unishefsky. (Published by Hurst & Blackett, 1939.) The author of the book was in the Russian Air Force, but managed to escape. In the interesting account of his experiences he gives the following information concerning tyres:—

'It is true that tyres come under the competence of another authority, the "Glavresina", or Administration-in-Chief of the rubber industry, which, however, can do just as little towards providing motor vehicles with this "Deficit Article". The U.S.S.R. cannot procure any real rubber, but has to make do with synthetic rubber of its own manufacture. On a hot summer day the roads are strewn every two or three yards with pieces of rubber often the size of half a tyre. The bad country roads, the cobble stones in the towns, the stones and broken glass scattered all over the place, make it impossible for a tyre to last even as long as three months, whereas according to the "Plan" it may not be changed for a year. The garage of the Podolsk Dzerschinsky Engineering Works once received a consignment of tyres, the outer covering of which the drivers could pierce with ordinary match-sticks, and with these tyres on these roads a lorry is supposed to run for a whole year.'

Although the above remarks would apply to observations some four or five years ago, the need for supplies of the natural product is still evident.

—*R. G. A. Bulletin.*

PRINCIPAL RUBBER FIGURES, 1937 TO 1939

	1937	1938	1939
World Shipments	1,139,800 tons	894,900 tons	1,005,200 tons
,, Consumption	1,095,100 ,,	933,600 ,,	1,077,500 ,,
Apparent Excess of Consumption ...	* 44,700 ,,	38,700 ,,	72,300 ,,
World Stocks end of year (outside Regulated Area)	531,900 ,,	452,100 ,,	...
Average Monthly World Consumption...	91,300 ,,	77,800 ,,	89,800 ,,
U.S.A. Stocks end of year	262,200 ,,	231,500 ,,	138,000 ,,
Afloat to U.S.A.	63,100 ,,	45,100 ,,	91,000 ,,
Total Stock and Afloat to U.S.A. ...	325,300 ,,	276,600 ,,	229,100 ,,
U.S.A. Consumption for the year ...	543,600 ,,	437,000 ,,	577,600 ,,
Average Monthly U.S.A. Consumption.	45,300 ,,	36,400 ,,	48,100 ,,
Stock and Afloat equals . . . months' U.S.A. Conumption	7¼	7½	4¾
U.S.A. Total Motor Vehicle Output ...	4,809,000	2,489,000	3,568,690
U.S.A. Tyre Production	53,310,000	40,907,000	57,078,000
U.S.A. Tyre Manufacturers' Stocks, 31st December	10,383,000	8,451,000	8,688,000
United Kingdom Stock end of year ...	57,785 tons	86,853 tons	...
Highest price paid in London for Spot Sheet	1/1¾*d.* Mar.	8 9/16*d.* Oct.	1/0 1/16*d.* Dec.
Lowest price paid in London for Spot Sheet	6 11/16*d.* Nov.	5¼*d.* Mar.	7 ⅝*d.* Jan.
Average London Buyers' Price for the year	9.40d.	7.16d.	8.90d.

—Extract from the Review of the Rubber Market for 1939 of Messrs. Symington & Wilson.

* Excess of Shipments

TEA QUOTA PRICES

The Quota prices ruling in South India on 22nd May were:—

Tea Export Quota	... 5 annas per lb. (Nominal)
Internal Market Rights	... 1 pie per lb. (Nominal)

In Calcutta Export Quota was quoted at 5 annas per lb. (Nominal), and Internal Consumption Quota at 2 pies per lb. (Nominal).

RUBBER AND QUOTA PRICES

With regard to the approximate current prices in Kottayam on 12th May due to be published in this issue, we understand that no transactions have taken place owing to news of invasion of Holland and Belgium.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The Annual Malaria Control Course for Laymen (Engineers, Planters, etc.) will be held at the above School, Keppel Street, Gower Street, London, W.C.1, commencing on Monday, 24th June 1940, at 10 a.m.

(1) The Course will be under Sir Malcolm Watson and the staff of the Ross Institute of Tropical Hygiene.

(2) The Course lasts five days, and ends on Friday, 28th June 1940. Except on Friday, 28th June, the lectures of the Malaria Control Course are given in the mornings only; but (in response to numerous requests from those who have attended in the past) additional afternoon lectures and demonstrations may be arranged on (*a*) Water Supplies, (*b*) Conservancy and Sewage Disposal, (*c*) Insulation against Heat and Cold, Air Conditioning for Comfort in the Tropics.

(3) The Course is designed for planters and mining engineers, but it will be of interest to all (including missionaries) who are proceeding to the Tropics. Doctors may attend, but the Course is primarily for laymen.

(4) It includes instruction on mosquitoes and their habits, drainage and other measures for the prevention of malaria. It is illustrated by lantern slides, films, demonstrations of the living insect in the various stages of its history, and a practical demonstration on Hampstead Heath.

(5) The Course is free. Application to attend the Course should be sent in as early as possible to the Organising Secretary at the above address.

(6) The most convenient Underground railway stations serving the School are Tottenham Court Road, Goodge Street, Russell Square.

H. LOCKWOOD STEVENS,
Organising Secretary.

15*th April*, 1940.

AVERAGE PRICES OF COMMON TEAS—APRIL 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	6	0	8	2
Tanjore	0	8	9	0	9	6
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	9	0	9	3
Tiruvarur	0	8	6	0	9	2
Pudukottah	0	8	0	0	8	5
Karur	0	8	5	0	9	6
Erode	0	8	2	0	8	9
Tiruchengodu	0	8	3	0	8	9
Namakkal	0	8	5	0	8	10
Salem	0	8	1	0	8	9
Dharmapuri	0	8	2	0	8	7

PLANTERS ON MILITARY SERVICE

The following names have now to be added to the list, published in the issue of 13th April, of planters and employees of Companies connected with planting who are engaged in Military Service:—

Name	*Address*
Anamallais—	
M. H. Deane	Stanmore Group, Valparai P.O.
P. Y. Fairbairn	Gajamudi Estate, Mudis P.O.
Coorg—	
Capt. H. J. Cheesley	Woshully Estate, Pollibetta P.O.
F. G. Foster	Dibidi Estate, Somwarpet P.O.
D. B. Harrel	Margolly Estate, Pollibetta P.O.
D. O. Scholfield	Farewell Estate, Pollibetta P.O.
P. Tippetts-Aylmer	Huvinakadu Estate, Kutta P.O.
Mysore—	
R. C. Morris	Honnametti Estate, Attikan P.O.
Nilgiris—	
P. Congreve	Devabetta Estate, Katary P.O.
P. H. de C. Dove	Mayfield Estate, Nellakota P.O.
T. Little	Caroline Estate, Mango Range P.O.
O. Garrett	Korakundah Estate, Kilkundah P.O.
Nilgiri-Wynaad—	
J. C. Osborne	Devarashola Estate, Devarshola P.O.
Travancore—	
N. S. Cole	c/o K. D. H. P. Co., Ltd., Munnar P.O.
R. M. Howie	Do.
K. L. Kershaw	Pampadampara Estate, Kombai P.O., Madura.
P. S. Leckie	c/o K. D. H. P. Co., Ltd., Munnar P.O.
E. J. C. Menzies	Do.
D. J. Milne	Do.
L. A. H. Mure	Do.
F. Price	Lower Surianalle Estate, Surianelle P.O.
J. D. Richardson	Ashley Estate, Peermade P.O.
W. C. Roy	c/o K. D. H. P. Co., Ltd., Munnar P.O.
P. Dove	c/o Malayalam Plantations Ltd., Quilon.
D. Bryson	Do.
B. W. Harvey	Do.
D. M. Marr	Do.
A. W. Reid	Do.
J. S. Seabrook	Do.
J. E. S. Temple	c/o Nonsuch Tea Estates Ltd., Quilon.
Employees of Companies interested in planting—	
A. D. McClancy	c/o Harrisons & Crosfield Ltd., Quilon.
J. C. Haigh	c/o Peirce, Leslie & Co., Ltd., Calicut.
J. N. A. Hobbs	Do.
D. L. Small	Do.
M. E. Bardwell	c/o T. Stanes & Co., Ltd., Coimbatore.

DEWAN BAHADUR S. L. MATHIAS

Dewan Bahadur Saturnine Lawrence Mathias, K.S.G., died at his residence 'St. Vincent's Grove', Kaprigudda, Mangalore, on 10th May. He was a Coffee and Tea Planter and owned Kelagur and Merthisubbangudigy Estates.

LONG TERM CONTRACT: TEA CHEST LININGS

The Tea Controller for India writes in his letter No. 3069 of 17th May 1940 as follows:—

'The Ministry of Food have now advised that lead linings for plywood chests should be a minimum of 1.7 oz. and for country-made chests a minimum of 2¼ oz.

'Regarding paper linings, one paper lining is in order.'

MARKET REPORT AND PRICES

The Calcutta Market

RUBBER.—London Rubber on May 21, 1940, 11 13/16*d.*

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

SOUTH INDIAN TEA	*Sales on* May 7 & 14, 1940
Singara	65
Sutton	62
Welbeck	63

RUBBER	*Sale on* May 9, 1940
Ribbed Smoked Sheet	58
Contract Crepe	57½
Mottled Brown Latex Crepe	55 to 56
Brown Scrap Crepe	54¼ to 55¾

The Madras Market

Current on 23rd May, 1940

Our last report was written on the eve of the German invasion of Holland and Belgium. As previously reported, prior to this, markets had been very narrow with only limited business passing. The news of the invasion coupled with the unexpected rapid advance and break through of the German mechanised columns resulted in heavy selling and in the absence of any buying support both speculative and on investment account, prices in the leading speculative counters broke very badly. On each successive fall, markets became more nervous and in order to check what might possibly develop into a general panic, the authorities have closed the Bombay and Calcutta Stock Exchanges. In so far as the Madras Stock Exchange is concerned, all forward dealings have been suspended as also dealings in Government securities. For the time being at any rate until the Calcutta and Bombay markets reopen, business on the Madras Stock Exchange will be confined to local stocks and shares. Generally speaking, the local market has stood up well to current events. A large number of buying orders, however, have been withdrawn and on any pronounced selling pressure, prices would be bound to decline. At present, however, there are no indications of any panic selling and sellers largely are holding out for full rates. The result is that only a nominal business is being transacted.

Rubber.—Yesterday the market received the news that the International Restriction Committee were leaving the rubber Quota unchanged for the 3rd and 4th Quarters at 80%. The price of rubber is, however, slightly lower at 11 9/16*d.* The internal price in India rules unchanged. Only a limited business has been possible in local rubber shares. Cochin Malabars were easier with sellers at Rs. 6 at the close. Malankaras changed hands at Rs. 35 with sellers over while Thirumbadis were freely offered at Re. 1-6 as. Tropical Plantations have lost a rupee at Rs. 15-8 as., and Kalpettas were also lower at Rs. 16-4 as. Among the lower priced shares, Rajagiris met with good support at Rs. 4-4 as. Sterling issues are all down, Malayalams being quoted at 29/3*d.* This price is ex the interim dividend of 4%. Pullengodes have also announced a dividend of 5% final which is the same as last year.

Teas.—The turnover was small and the tone is slightly easier. Sellers predominated in most of the issues. United Nilgiris after being firm at Rs. 110 were easier at Rs. 108. Periakaramalais lost 4 as. at Rs. 17 and Peermade 8 as. at Rs. 25-12 as. Kalasas were well supported at Rs. 5-8 as., and Chembra Peaks at Rs. 3-4 as.

FORTNIGHTLY RAINFALL STATEMENT

April 28, 1940 to May 11, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	2·06	N.R.	6·85	...	25. Kotagiri ...	5·83	4·07	6·82	16·72
3. Kallar B'dge	6·51	3·72	4 56	14·79	26. Ootacamund...	2·22	3·13	4·26	9·61
4. Koney ...	0·26	4·09	10·88	15·23	27. Yercaud ...	5·03	2·05	1·43	8·51
8. Twyford ...	3·42	2·59	8·53	14·54	30. Devarshola T.E.S. ...	1·63	1·24	3·05	5·92
9. Pettimudi ...	5·08	5·60	8·53	19·21	31. CALICUT ...	0·07	2·98	3·05	6·10
10. Kalaar ...	3·94	3·02	6·85	13·81	32. Kuttiyadi ...	6·30	...	...	6·30
11. Chittavurrai...	5·73	3·49	6·57	15·79	33. Vayitri ...	2·15	1·84	4·91	8·90
12. BODI'KANUR...	0·59	1·85	5·73	8·17	34. Manantoddi...	1·19	2·03	3 56	6·78
13. COCHIN ...	0·23	3·53	5·62	9·38	35. Bilgiris ...	2·16	1·11	3·66	6·93
14. Mooply ...	1·63	4·51	7·43	13·57	38. Pollibetta ...	2·88	2·36	1·96	7·20
15. Pachaimallai	4·26	4·90	5·16	14·32	39. Coovercolly ...	3·87	0·41	4·61	8·89
16. Mudis ...	4·62	3·34	7·41	15·37	41. Kadamane ...	2 78	...	4·94	7·67
17. POLLACHI ...	2·86	...	3·35	6·21	43. Merthisub'gey	3·00	1·76	3·42	8·18
18. Ropeway Waterfall ...	1·88	0·89	6·09	8·86	45. Balehonnur ...	1·57	2·26	2·36	6·19
21. Kerala Estate	6·30	3·02	7·48	16·80	46. MANGALORE ...	0·66	1·29	0·52	2·47
22. Naduvattam	2·04	2·75	4·70	9·49	47. MADRAS ...	...	...	0·48	0·48
24. Coonoor ...	2·22	2·51	9·26	13·99					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

There is attached for the information of readers a list of donations and subscriptions received up to 31st May towards the U.P.A.S.I. War Fund. Considering that before the organisation of the Fund many planters had already agreed to subscribe to local charities with the same object, the response has been generous, and in a number of cases planters in addition to a monthly subscription have given or are giving special donations as circumstances allow. Of the total amount of approximately Rs. 8,037 collected up to the end of May, expenses amounted to Rs. 66-15-6; of this sum, Rs. 35-6-0 was entailed by initial expenses such as the printing of the Appeal, Receipt Books, etc. We are pleased also to record here that most of the banks in view of the charitable nature of the Fund have agreed to waive their usual charges for standing instructions on Bankers' Orders:—

DONATIONS

	Rs.	A.	P.
Doig, J.	50	0	0
Humphreys, C. L. J.	50	0	0
Jeffrey, J. H.	500	0	0
Carson Parker, H. R.	30	0	0
Kirwan, N.	120	0	0
Harler, Dr. C. R.	25	0	0
Morris, R. C.	50	0	0
Morris, C. W. G.	50	0	0
Simcock, E. W.	250	0	0
Walker, E. R. W.	50	0	0
Hill, A. L.	50	0	0
Waters, G. H.	25	0	0
Ranicar, E. E.	20	0	0
Gallaher, L. G.	50	0	0
Peirce, Leslie & Co., Ltd.	1,500	0	0
Peria Karamalai Tea & Produce Co., Ltd.	500	0	0
Cochin Malabar Estates Ltd.	500	0	0
Chembra Peak Estates Ltd.	250	0	0
Ouchterlony Valley Estates Ltd.	250	0	0

	Rs.	A.	P.
Vellamalai Tea Co., Ltd.	250	0	0
Kalasa Tea & Produce Co., Ltd.	250	0	0
Anupura Coffee Works Co., Ltd.	250	0	0
Nilgiri Neergundi Estates Co., Ltd.	150	0	0
Thirumbadi Rubber Co., Ltd.	150	0	0
Nonsuch Tea Estates Ltd.	250	0	0
Carolina Estate	20	0	0
Kartikerri Estate	50	0	0
Glen Lorna Estate	25	0	0
Bedaguli Estate	50	0	0
Attikan Estate	50	0	0

SUBSCRIPTIONS

Anamallais	150	0	0
Central Travancore	20	0	0
Coorg	341	0	0
Kanan Devans	499	14	0
Mundakayam	45	0	0
Mysore	236	0	0
Malabar	162	14	0
Nelliampathies	76	0	0
Nilgiris	321	0	0
Nilgiri-Wynaad	60	0	0
South Travancore	125	0	0
Wynaad	125	0	0
Miscellaneous	60	0	0

U.P.A.S.I. ANNUAL CONFERENCE

We publish below the programme for the U.P.A.S.I. Annual General Meetings in August, to be known this year in accordance with the revised procedure as 'The U.P.A.S.I. Annual Conference'. Members may note one omission from the programme—that of the Annual Dinner. The Executive Committee have decided that in accordance with the Viceroy's appeal to cut down expenditure on social functions as far as possible in war time, no dinner will be held this year.

Saturday,	3rd August	10-00	Executive Committee Meeting.
Monday,	5th August	9-00	Labour Department Control Committee Meeting.
		10-00	Tea Section Committee Meeting.
		15-00	Opening of Annual Conference.
Tuesday,	6th August	10-00	Scientific Conference (all day).
Wednesday,	7th August	10-00	Tea Section General Meeting.
		14-15	Labour Department Control Committee Meeting.
			(Labour Advisory Committee and Cardamom Sub-Committee Meetings will also be held on this day.)
Thursday,	8th August	9-30	Coffee Section Committee Meeting.
			Labour Department Control Committee Meeting.
		12-00	Coffee Section General Meeting.
		14-30	Labour Department General Meeting.
Friday,	9th August	10-00	Annual General Meeting of U.P.A.S.I. and closing session of Conference; to be followed by Annual General Meeting of the S.I.P.B.F.

CREATING DEMAND FOR FINER KINDS OF TEA

By J. Louis Royal

The article reproduced below should be of interest to readers of the 'Chronicle' as indicating the views of an educated upper-class Indian on Tea Propaganda.

The primitive man who made stone implements never had the necessity of advertising his wares. When the producer and consumer come into direct contact, it is fairly simple to keep supplied well adjusted demands. But these two basic factors in the economic system have found it more and more difficult to remain in contact with each other. An inevitable insulation between producer and consumer has developed from the enlargement of the scale of business operations. The intricated distributing mechanisms of today has made it harder for the consumer to get what he wants if he is not satisfied with the producer's guess.

In the last decade and during the slump the production of Tea was said to have reached the sales saturation point, being in excess of the demand. The restriction scheme was voluntarily forced on the industry by legislation. It became apparent that the problem was not so much to produce Tea as to sell it. The industry too soon realised that its system of marketing was haphazard—producers were clogging certain specific markets and neglecting potential markets close to their factory doors.

However, since the formation of the Indian Tea Market Expansion Board, a serious attempt is being made to tap the hitherto neglected local markets.

The trend of publicity campaigns conducted by this Board has a narrow tendency of confining itself to the uniform and now too stale 'Drink Tea' and 'Drink More Tea' slogans. As a result the consumer demand has been to a large extent diverted to the commoner sorts of Tea.

The T.M.E.B. would better serve the planters and consumers if it would attempt to educate the public to ask for finer kinds of Tea. There definitely is a large potential market among the middle class of the Indian population who could be made to willingly pay 10 to 12 annas for a pound of O.P. or Fannings—if educated to ask for. Most manufacturers would only be too glad to dispose off their produce at that price if a demand is created in the local markets.

Advertising is a highly specialised science. With proper advertising there is nothing for which a demand could not be created. How subtle and powerful advertising has been on the human life is seen from the fact that the luxuries of yesterday are necessities today. It is not possible to deal on the various phases in modern advertising in a short article like this. Nevertheless it may be safely pointed out that the planter desires to see the T.M.E.B. adopt more progressive and selective form of advertising.

Such hackneyed phrases like 'The cup that cheers', 'Ask for a cup of Tea' etc. must be dropped out once for all. What is the motive that impels consumer to pay his half a rupee for a pound of Tea? The motives are: Self Preservation, Imitativeness and Parental Love or family affection.

Self Preservation is the most primitive and strongest of all human instincts except perhaps with the possible exception of parental love. Tea is a beverage that essentially aims at self preservation. Copy in advertising should bear this factor as one of the important themes.

The second motive often neglected but very well suited for the exploitation of the Indian market is parental love and family ties. This is more peculiar to the East than to the Western countries. The Indian social structure aims at the preservation of family life at all costs. Divorce is vulgar, the wife looks upon her husband as a demi-God and her children are all her hopes. The newly married son brings his bride to live with his parents. Though often the Indian wife is pictured as meek and humble, really it is she who reigns inside the four walls. It is she who decides the household budget and what is good and bad for the family. Today thousands of patent foods are sold because of the desire to please the husband or the children. By appealing to this motive most middle class Indian women could be made to buy almost any quality of Tea.

The third motive Imitativeness is quite a natural trait. How very natural it is, is apparent from the fact, that we all do the same things and insist on doing very much the same as our fellow humans. Imitativeness is a strong trait in women. If Mrs. Bose next door has bought a chiffon coloured saree with a silver border, it is a pretty sure thing her neighbour Mrs. Pandit will be seen wearing one with a gold border. Similarly if Mrs. Pandit is persuaded to drink Orange Pekoe there is no reason why her neighbour will not drink Broken Orange Pekoe.

Advertising Tea with such subjective appeals, if however, not supplemented by enthusiasm and co-operation from dealers also, may fall flat. For example Mrs. Balan has been reading every day in the National daily for which her husband is a subscriber that Orange Pekoe is decidedly superior to the nameless brand she is drinking, up till now. The next time she goes to her grocer she is bound to enquire about Orange Pekoe and if the dealer gives a curt 'We don't stock madam', all the advertising is wasted.

Hence an attempt should be made first to educate the grocers and dealers to stock better qualities of Tea, which may be followed up by a consumer advertising campaign. How much of their produce would the various companies allot for the local markets, at what price etc., could be learnt in an informal Tea Marketing Conference that may be called by the T.M.E.B. and after careful planning the campaigns may be launched. The trouble is worth it, if a slump is to be avoided at the termination of the present hostilities.

The secret of expanding tea sales is not by asking the public to ask for a cup of tea but by advertising the various benefits one derives by drinking tea. In other words what every salesman is first taught to learn—'Sell not the goods but the service'.

'Sell not Tea but its benefits.'

TEA QUOTA PRICES

The Quota prices ruling in South India on 5th June were:—

Tea Export Rights	... 4 annas 6 pies per lb. (Nominal).
Internal Market Rights	... 1 pie per lb. (Nominal).

'SOMEWHERE IN INDIA'

We wake to the sound of a bugle blasting in our ears. The light is switched on and the bearer heaves up the mosquito net. The army, not dawn, has brought another day.

As we struggle manfully to remove our beards by artificial light, a face appears in the doorway. 'Any sick here?' Shall we tell him what we really feel like?—No! Poor fellow, most people have told him that already, and it will be our turn to do the 'rounds' soon.

All the world rides a bicycle here so, as dawn breaks, we assemble, all front wheels 'dressed' for inspection. This ritual over, we mount and gracefully glide off in perfect (?) formation to the first parade of the day. The fresh morning air soon dispels all cobwebs, and I feel that at any corner now we will come face to face with Deanna Durbin and her girl friends. (Reference, 'Mad about music'.)

Our parades and lectures cover a range of subjects so wide that it would be easier to tell of the ones we do not touch on, and if only I could stuff up the holes in my seive like memory, the 'baton' should be as good as in my hand!

At last the whistle blows, and we make our way to breakfast, in slightly quicker time. On reaching the Mess our eye is caught by a seething mass, slightly resembling a Rugger scrum only larger, heaving gently to and fro over the bar counter. A bedraggled figure emerges and, with a triumphant glint in his eye, he marches off with a letter in his hand. 'Ah! the mail is in!'

Back to parades again until a quarter to one.

This time there is a much more dignified hush in the Mess as men enter, and drop, one by one, exhausted, into a chair, with a drink and the tattered remains of the morning paper. 2-30 p.m. finds most of us snoring and perspiring on our beds, save for a few poor unfortunates; it's their hour with the 'Munshi' who coaxes us to fashion our mouths into curious shapes—'sahib ka ghora dafter men hai!'

As evening approaches we drift away to the game which suits our figure best, and there are few which are not available to us. For those who are not athletically minded there is an excellent club nearby and a well equipped library of our own.

The rest of the day is ours. To make hay or not to make hay, that is the question, but as there is always tomorrow (5-30 Ack emma!) to be thought of, early bed is the most popular vote.

'Girls, do you want a wasp waist? *We* have it; come and join our P.T. classes!'

None of those physical jerks we used to do in our schooldays; oh no! slow and gradual distortion of all the limbs and muscles of the body; 'hopping and astride jumping on alternate feet with alternate arms raising sideways, upwards and downwards in *slow* time' (yes, it's mental distortion as well!). After forty minutes of this we feel that men like Joe Louis were never really given a fair start in life. The fat rolls off and the weight goes up.

And so we go on, day by day, a hard and healthy life, preparing for what may come.

From all parts of India, and from all walks of life, men have come; and most of us meet one or two long lost friends, who have left their office stools or their plantations for the common cause.

—ANON.

THE CULTIVATION OF TUNG IN NYASALAND

In view of the great interest being shewn by many tea companies and growers in Nyasaland in the cultivation of Tung, Mr. C. C. Webster, the Government Tung Officer, has kindly written a series of articles for publication in the Quarterly.

As there are many other planters, not members of the Nyasaland Tea Association, who are also engaged in this crop, it is intended to distribute to them *gratis* a copy of this issue in the hope that the articles will be of interest to them also.

If sufficient interest is shewn in articles on Tung published in the Quarterly it is suggested that others besides the members of the Association may care to subscribe regularly to the Quarterly, when every effort will be made to publish up to date articles on all aspects of Tung cultivation.

Those interested should communicate with The Editor, The Nyasaland Tea Association Ltd. Quarterly Journal, Box No. 43, Blantyre, Nyasaland.

NOTES ON THE CULTIVATION OF TUNG OIL TREES

By C. C. Webster, B.Sc., A.I.C.T.A.

PART I. A REVIEW OF THE PROGRESS MADE IN THE PRINCIPAL COUNTRIES WHERE TUNG OIL HAS BEEN PLANTED.

During recent years tung oil trees have been planted in nearly all the tropical and sub-tropical territories of the world. In many of these they have either been a complete failure or the results obtained have not been of sufficient promise to warrant continued trial. In this article it is proposed briefly to review the results so far obtained in those countries where most progress has been made.

A. Foreign Countries

1. *The United States.*—In America attention has been confined to the species *Alcurites fordii* since the few trees of *A. montana* which were planted proved a failure. Tung seed was first introduced in 1902 but nothing more than small experimental plots were planted until 1923. The oldest tree concerning which information is available is that planted by William H. Raynes at Talahassee, Florida, in 1906. Such yields as were recorded from this tree are shown in Table I.

TABLE I

Yields of a single tree of A. fordii at Talahassee, lbs. of dry seed.

Year		1908	1909	1910	1911	1912	1913	1923
Age, years	...	2	3	4	5	6	7	17
Yield	...	0·2	2·1	2·9	11·5	28·4	36·5	75·0

In 1912 a small experimental plot was planted at the experimental station at Gainesville, Florida. Yield records are available for only ten of these trees, of which three were planted in 1912 and the remainder in 1914. The first fruits appear to have been borne when the trees were four years old, but complete records were only commenced in 1922. The yields for the thirteen years from 1922 onwards are shown in Table II.

TABLE II

Yields of 10 trees of A. fordii at Gainesville, Florida, lbs. of dry seed.

Year	Age from 1914	Yield	Year	Age from 1914	Yield
1922	8	8·9	1929	15	45·6
1923	9	18·5	1930	16	15·4
1924	10	27·3	1931	17	47·3
1925	11	21·8	1932	18	4·1
1926	12	3·5	1933	19	23·0
1927	13	32·8	1934	20	26·2
1928	14	20·3	Mean.		22·7

The best tree gave an average yield over this period of 67.3 lbs. of dry fruit per annum, and the poorest gave 4.7 lbs. The low yields in 1926 and 1932 were due to frost at flowering time. The first commercial planting in the Southern States was the 220 acres planted by the American Tung Oil Corporation in the winter of 1924-25, which gave the following yields in its early years:—

TABLE III

Yields from 220 acres of A. fordii, per acre.

Age, years ...	3	4	5	6	7
lbs. dry fruit ...	130	125	355	82	341
lbs. oil ...	24	23	65	15	63

It will be seen that these yields are much lower than those which might have been expected from the crops obtained from the experimental plot mentioned above. Following upon this venture extensive planting was undertaken, and by 1937 the total acreage planted in the six states of Mississippi, Florida, Louisiana, Georgia, Albama, and Texas was reported to be between 42,000 and 45,000 acres. Although this is a far greater development than has occurred in any other part of the world, and although it includes a number of plantations considerably older than those to be found in other countries, unfortunately very few reliable yield figures are available, and those which have been published do not indicate that paying yields have been obtained. A survey of the tung plantations in the six states mentioned above which was published in 1935 showed that 562 acres of six years old trees gave an average yield of 278 lbs. of fruit 'as gathered' per acre. This fruit presumably contained a certain amount of moisture, but even if it is assumed that it was air dried this figure is only equivalent to approximately 52 lbs. of oil per acre. It was further stated that approximately 300 acres of trees 7 to 11 years old gave an average yield of 343 lbs. of fruit per acre, which, on the same basis is equivalent to approximately 64 lbs. of oil per acre. These figures, which appear to fall into line with those of Table III above, certainly cannot be regarded as encouraging, as a yield of little more than ½ cwt. of oil per acre from trees over 7 years old could not be profitable on a cultivated plantation.

2. *The Dutch East Indies.*—Both species have been planted in Java since 1925, systematic trials being commenced in 1931, but so far no yields have yet been published. *A. fordii* has been unsuccessful at lower elevations, and although it may perhaps do better in some of the more mountainous areas it is generally considered unsuitable to the climate of Java. *A. montana* is quite promising in both the hills and the plains but does not yet appear to have definitely proved itself to be a profitable crop. The need for improved planting material has been fully realised and work on selection and vegetative propagation is in progress.

3. *French Indo-China.*—*A. fordii* occurs wild in the extreme north of the territory but is rare, and trial plantations have given poor results. *A. montana* is common in the northern half of the peninsular and is found in the forest regions throughout Indo-China. This species has long been planted as a shade tree in coffee plantations and in the neighbourhood of villages, the fruit being collected from these and from the wild trees and the oil extracted by simple native presses and sold locally. Planters have also established small plantations of *A. montana* but these have so far failed as the yields obtained were found to be insufficient to be remunerative. Investigations made on 599 trees at the experimental station at Tuyen Quang showed that approximately 45% of these had less than 5% of female flower and were therefore poor yielders. On the other hand, 50 trees selected from the total of 599 gave over two years an average yield of 54.62 lbs. dry fruit per tree per annum. The conclusion drawn from these and other investigations was that plantations of unselected *montana* are unlikely to be profitable, and work is therefore in progress at experimental stations to produce improved planting material.

4. *Russia.*—Considerable interest has been taken in tung planting for some years but the published information available is very scanty and more attention has been devoted to *Aleurites cordata* than to the other species. Extensive trials with *A. fordii* have, however, been made in Trans-Caucasia and Georgia and the total area under this species in 1937 was stated to be 5,704 hectares.

5. *South America.*—Considerable planting must have been done in South America but unfortunately no details are available. In Brazil trials were commenced in 1932 with *A. fordii*, *A. montana*, and *A. cordata*, and are also being made with an indigenous species *A. pentaphylla* which has not been reported from anywhere else. In the Argentine plantations exist in the provinces of Missiones and Corrientes, the largest being reported to consist of more than 50,000 trees. There are also plantations in Paraguay.

B. The British Empire

Although one or two small parcels of seed had been sent out before, distribution of tung seed for trial in various parts of the Empire really commenced in 1927 and from that year until 1931 a considerable quantity of seed, practically all of *A. fordii*, was sent for trial in nearly every territory in the tropics and sub-tropics. In most places *A. montana* was introduced rather later. In many places the trials have so far been a failure: this may be said of all the West Indian Islands, British Guiana, the West African Colonies, Malaya, Palestine, Zanzibar, Mauritius, and Cyprus. Territories where results are still doubtful but where the trees do not so far show much promise include Uganda, Ceylon, and Northern Rhodesia. The places where the trials were more successful and where more extensive planting has taken place are briefly dealt with below.

Australia.—A fairly large acreage has been planted with *A. fordii* in Queensland and New South Wales but plantations have not yet proved themselves to be profitable. Isolated trees have undoubtedly fruited fairly heavily, and it has been claimed that the majority of trees aged 3 or 4 years produce on an average 300 fruits per annum, while some are said to have borne 700 to 1,000 fruits at seven years old. If these figures are correct then *A. fordii* is showing greater promise in Australia than in any other part of the Empire.

New Zealand.—Planting in New Zealand has been confined to *A. fordii*, as the few trees of *A. montana* and *A. cordata* which were planted experimentally showed no promise. Burns *et al.* report that in 1937 approximately 5,500 acres of trees aged 1 to 6 years were being maintained, but their survey of the groves revealed a very unsatisfactory state of affairs. Selection of land for tung planting had been most unwise as the majority of that utilised was abandoned or unproductive farm land, badly drained or deficient in lime. At least 70% of the total area in North Auckland was planted on badly drained land. It is also suggested that the summer temperatures are not sufficiently high to bring the fruit to maturity every year. Several plantations have been abandoned and only one or two growers are continuing to extend their acreage. Another report states that in 1938 there were in New Zealand 55 acres of apparently satisfactory trees, 733 acres of unsatisfactory trees, and 3,760 acres of dead or dying trees.

East Africa.—Trials with *A. fordii* have been made in Kenya by the Agricultural and Forestry Departments and by a number of European planters. The general conclusion has been drawn that this species is not promising and that no further planting can be recommended. A few trials with *A. montana*, which have been commenced more recently, show distinctly better promise. The position is somewhat similar in Tanganyika. In Uganda both species have been planted on a small scale but without encouraging results.

India and Burma.—Trials have been made with both species in the Debra Dun District, in Assam, and in the Ranchi District of Chota Nagpur. No conclusive results have yet been obtained but the indications are that *A. montana* is more promising than *A. fordii.* In Burma trees of both species proved unsatisfactory when planted in the more tropical climate of the lowlands, but much better results were obtained at the higher elevations of the Shan States. *A. montana* has proved itself to be much more promising than *A. fordii*, the yields obtained from the latter species being almost negligible up to six years old. *A. montana* may be found growing in a semi-wild condition at a number of places in the Shan States. As these trees are nearly always found within easy reach of a Buddhist monastery it seems almost certain that the seed was introduced from China by the monks and that the species is not truly indigenous. They usually occur mixed up with other jungle trees and are not given any cultivation, but some of them, which are probably in the neighbourhood of forty years old, have grown into large trees about sixty or seventy feet high. Some trees of this age are still bearing profusely but their yields are not what they might have been under better conditions as they have been reduced by the crowding of the surrounding trees. At least three companies are now planting tung in the Shan States on a fairly extensive scale, the earliest having commenced operations in 1929.

C. Conclusions

From a consideration of the results reviewed above two points emerge:—

(*a*) No country has yet been able to report the establishment of a profitable tung oil plantation.

(*b*) Although in the absence of yields records it is impossible properly to compare the two species, it appears that in all the tropical countries where both have been tried *A. montana* has been found more promising than *A. fordii.* This may be seen from the results noted above from the Dutch East Indies, Indo-China, India, Burma, and the East African Colonies.

—*The Nyasaland Tea Association Quarterly*, January, 1940.

WOUND HEALING AND BARK RENEWAL IN HEVEA BRAZILIENSIS

GROWTH-STIMULATING SUBSTANCES AS AIDS

By Herbert Ashplant, A.R.G.S.

Although the trees which produce that unique substance rubber seem themselves to have little use for it, they do not, except in old age, take steps for the external dispersal of any of their product. Latex is not only made by, but well sealed away in an organically interned system of pipes, from which it cannot be tapped without extensive destruction of the vital overlying tissues. Wounding, therefore, plays a quite unavoidable part in the commercial exploitation of Hevea Braziliensis.

For some reason or other, the systematic excision of cortical tissues, which has been given the midly connotative name of 'tapping', is not, in the popular view, regarded as wounding. This term is reserved by the planter for the, generally unintentional, damage done when the cambium is implicated with the other tissue, for wood wounds, in fact.

Because of the obstacles they are liable to raise in future tapping paths, wood wounds on the tapping panel have always been a source of worry to the rubber planter, whose worries are not decreased by the knowledge that by their number and nature these panel blemishes provide ineffaceable public evidence on the quality of his stewardship.

However caused, panel wounds present characteristic features which betray their origin. Most characteristic of the operative wounds are those borne by the trees which have given the tapping learner his indispensable practice. Like troubles, the wounds made by learners, never occur singly, and due to the difficulty they have in passing the old spot without dropping in, their scars usually exhibit a vertical continuity, which makes for slow healing. By contrast, the wounds made by experienced tappers are usually single and small.

Even more characteristic, and sometimes more serious than the reiterated blunders of the learner, are the scars of parasitic origin. The organisms responsible for Stripe Canker and Mouldy Rot may kill off such large areas of newly tapped-over bark as to frustrate efficient tapping for years afterwards.

The making of even bark excisions to within 1 mm. of the cambium calls for considerable skill and when a tapper has to perform 300 to 400 of these delicate operations every day slips are inevitable. And since the tapping learner, like the parasitic diseases mentioned, will have to be suffered, the rubber tree will not escape occasional serious wood wounds.

COW-DUNG AND CLAY—THE UNIVERSAL PANACEA

It was a common practice on rubber estates at one time to cover the larger wounds with a plaster of cow-dung and clay. This, it was currently believed, hastened the healing.

Though there were 'dissenters' from this belief, there were, practically, no 'non-conformists', for those who were sceptical of the healing virtues of cow-dung and clay were gratefully appreciative of one benefit. It provided a fairly useful camouflage for the tapping blemishes abovementioned, hiding from the prying eye of the 'v.a.' many traces of lax supervision. Thanks to this subsidiary service, the cow-dung and clay treatment became a routine.

Since the poultices described were credited with healing virtues, it was a logical extension of their field to apply them to the tapped-over panels generally when the failure of bark renewal to come up to expectations or needs became an increasingly serious problem. In the hope that a plaster jacket of these handy materials would miraculously restore recuperative powers lost beyond recall, some planters almost embalmed the tapped-over panels of their trees in cow-dung and clay.

The present writer, who has always been a 'doubting Thomas' on the possibility of speeding up true bark renewal by external poulticing, made a few attempts to get measurable evidence of the more rapid wound recovery alleged. He was unable to discover, however, that the portions of wounds covered by cow-dung and clay did heal more quickly than portions left uncovered.

Whether the embalming described ever coaxed the comatose cambium to redouble its efforts to repair the damage wrought by over-tapping, or, alternatively, provoked the phellogen or parenchyma to proliferate in the desired way no one has settled by comparative tests. It was, however, very early made apparent to some of us who applied the balm to large wounds, that the treated tissue was easily tempted to proliferate in an undesired way. Wherever the poultices were left on for considerable periods (as they were on the larger wounds), one found, on removing the wrappings, an embarrassing development of adventitious rootlets on the upper lips of the wounds.

Later on, it may be noted here, the application of tarry substances to the tapping panel were reported to have a stimulating effect on the superficial bark tissues.

PALM OIL AND BARK RENEWAL

It now appears that the scepticism with which a few of us viewed the evocative potentialities attributed to cow-dung and clay may not have been wholly justified. The discovery in animal urine, a short time ago, of growth stimulating substances or 'hormones' provided the first hint of this. If the researches made to date have not revealed the existence in cow-dung of a 'phyto-hormone', only a bold man would deny that such a discovery may not lie ahead. Meantime, it has been convincingly established that certain substances do actually favourably influence bark growth in Hevea. The investigations which have established this were carried out in Malaya by F. Beeley and E. D. C. Baptist, and are described by them in No. 25 of the Journal of the R.R.I.M.

Having previously noted that certain vegetable oils, used as vehicles for fungicides, notably, linseed oil, seemed to have a stimulating effect on bark regeneration, these workers subsequently arranged a series of experiments designed to measure the effect, using, for preference, palm oil. This oil, both alone and as a vehicle for fungicides, was periodically applied to the freshly tapped-over bark of groups of trees, most of them selected because of the 'hardness' of their bark.

Measurements of the bark thickness made at the time, and seven months later, indicated a significant improvement in the rate of bark regeneration on the treated trees, compared with that shown by the untreated trees. Increases in thickness over the control trees of from 25% to 50% were recorded.

The interesting observation was made that the improvement produced by the palm oil was more marked during periods, when growth generally is slower. During the monsoon period the effect was much less noticeable. The further observation that the differences in the bark thickness between treated and untreated trees were less evident on an estate where the growth was generally good is in harmony with the first.

The two observations mentioned lead the authors to ascribe the improvement recorded to two factors, one a Hormone factor which promotes cambial activity and growth; the other a physical factor—the prevention by the oil film of excessive evaporation of moisture from the thin-walled tissues exposed by the tapping operation. Further experiments calculated to throw light on the factors involved are being undertaken by the Botanical Division of the Institute.

Possibly because of these further experiments in contemplation, little is said in the report described about the quality of the extra bark renewal induced. We are only told that the P.O. treated trees showed a 25% to 50% improvement in the thickness of their renewed bark.

WHAT IS BARK RENEWAL?

The absence of any information on the quality of the renewal is regrettable, since it is the sort of new bark produced which is important. This follows from the fact that in the cortical regeneration or 'bark renewal' which takes place after tapping, two distinct tissues may participate. The leading re-builder is the cambium proper, lying between the bark and the wood, but there is another tissue which takes a hand, viz., the cork cambium, which is located in the outer bark. Bobilliof seems to have been the first to record in print an observation which all who have given time to the study of bark renewal must have noted over and over again, and that is the specific duties of the two cambiums. All the new latex vessels developed in renewing bark arise exclusively from the growth and division of the true cambium. In the new tissues which originate from the cork cambium, no fresh latex vessels are generated. The function of the latter seems to be limited to the production of ordinary ground tissue and stone cells, which, among other duties, serve as a protective covering for the delicate tissues within. It is this covering layer, completely devoid of laticiferous tissues, which makes up a large proportion of the thickness of renewing bark.

In laying stress on the distinctive and exclusive character of the renewal brought about by the cambium proper, above all, on the fact that the other cambium is incapable of producing laticiferous tissue, one must avoid giving the impression that the latter's contribution is commercially valueless. Indirectly, by providing a better support for the tapping knife, and a deeper channel for the latex flow, the extra thicknesses added by the cork cambium can influence the volume of the latex crop gathered very appreciably.

This qualitative aspect need not be dwelt on further. Enough has been said to bring out its importance in the matter under discussion. We shall await with interest the investigations now in train, which will, we hope, show whether the influence of the palm oil, etc., in stimulating new growth penetrates to the deep-seated true cambium, or whether it influences only the superficial cambium, i.e., the phellogen.

PLANT GROWTH STIMULANTS *v.* PLANT FOODS

With regard to the hopes that may be raised by the discovery of these supposed hormones, these are less likely to be disappointed if the distinction between substances which stimulate growth, and those which sustain it is kept in mind. There is a deal of difference between a stimulant and a food, and those of us who have had a lot to do with trees whose rate of bark renewal is poor, cannot have failed to notice that such trees are invariably poorly nourished. Having suffered undernourishment for long, most have lost the capacity for virile growth. The reason may be poor soil or over-tapping, or both. Even if it should be demonstrated that the cambium of these devitalised trees can be incited by palm oil, etc., to unwonted activity, is it likely to be more than a spasm? The sort of extra spurt which can be obtained from nearly exhausted humans by a stimulant?

In connection with the promised investigations a query arises: So far, the inquiry into the influence of stimulative substances has been conducted by painting them on one ground of trees, and comparing the renewal on these with the renewal of supposedly similar trees which have not been treated. The employment of different trees, which all who have tackled rubber experimentation know, differ in their condition and reactions, opens the door to errors that cannot wholly be conjured away by mathematical theory. Could not a more reliable test be made by applying the palm oil to a portion only of the tapped-over bark, using the untreated adjacent portion as the control?

Since some planters may be led to try the effect of palm oil (and, possibly, other substances) for themselves, a note of caution should, perhaps, be added. It was found by Beeley and Baptist that the too frequent application of palm oil to the poorly protected bark exposed by tapping can have injurious effects. Even weekly applications resulted in the accumulation of what is described as oxidized fat decomposition products on the bark surface, which, in turn, resulted in the death of successive layers of bark. Although this damage did not prevent most of the treated trees from showing a net gain in bark thickness, it was, to say the least of it, an undesirable development. Later, trials proved that the disadvantage could be avoided when the applications were made at weekly intervals by confining the oil painting to previously untouched areas of bark.

Though not in specific reference to the palm oil treatment, there is just a hint in the report of the possibly deleterious influence of the sun's heat. It is not well-enough understood that Hevea, as well as human skin, can suffer sunburn in the tropics. One should add that this does not happen except as a consequence of unnatural interference, when, as hinted above, the trees have been too 'well oiled'. The reviewer can recall one instance of wholesale damage from sun and oil.

Having found that a mineral oil concoction applied to the boles of the rubber trees kept wild animals from gnawing the bark, the manager of a certain Indian estate treated one whole division of trees with the stuff. Not long afterwards the bark on many of these trees was reported to be behaving queerly. Called in to advise, one found on inspection that hundreds of the trees had bark wounds extending to the cambium. The majority, fortunately, were more superficially affected, but on all the bark areas treated the outer layers had been killed, the discoloration, if not the damage, going much deeper. The fact of greatest significance, however, was the distribution of the serious damage. Deep bark wounds were suffered only by the trees most exposed to the sun, and on those areas of oil-treated bark which got most sun. On the trees or portions of trees which were relatively well shaded, only superficial injury or discoloration was noted.

—*The India-Rubber Journal*, January, 1940.

LONG TERM CONTRACT: DATE OF SHIPMENT

The Tea Controller for India writes in his letter dated 21st May as follows:—

'The Ministry of Food have now advised me that as the date of sailing may, owing to the circumstances which may arise, be considerably delayed after the ship has closed to cargo, the date of ship's closing to cargo shall be accepted as between the Ministry and the supplier as the date of shipment, from the 18th May 1940 onwards.'

MUSINGS ON MULTI-STEM COFFEE

By C. E. Fenwicke-Clennell, Farnham Covert Farm, Kiambu.

It is not the purpose of this article to convert an additional number of planters to the Multi-Stem Method of Coffee Cultivation willy-nilly, nor to start a battle between the protagonists of the Multi-stem and the Single-stem methods in Kenya, but, as it appears that there is a definite increase in the number of planters who are, let it be said, toying with the idea of putting their holdings into Multi-stem Coffee, the tabulation of a few facts which seem to have established themselves on this farm during the last seven years, may be of interest to them.

Let us first take the question of yield per acre. The farm under review, planted in or about 1920, can be described best perhaps as being f.a.q., the owner lays no claim to being anything more than a f.a.q. farmer, and further, during his occupation, the coffee on his holding has only received f.a.q. attention in the matter of manuring: about one debbi of manure or its equivalent per tree every four years. Moreover, no additional cosseting has been given to that portion of the shamba under multi-stem so that, the additional tonnage of coffee harvested of late must, he thinks, be put down to the fact that the farm likes being under multi-stem and yields better and more regularly under this system, than it did under single-stem.

For instance, during the years 1932-33 to 1935-36, one hundred and thirty acres of coffee yielded at the rate of exactly 5 cwt. to the acre under the single-stem system whilst during the period 1936-37 to 1939-40, as converted multi-stem came into bearing, this area averaged out at the rate of 6.9 cwts. to the acre.

From records it is impossible to say that rainfall has been the determining factor in this increased yield, the root-systems too, are the same as of old, but, if asked to give a reason for it, this farmer would answer that increased yields have been brought about by (*a*) the fact that nowadays he can get through his pruning quickly and when he wants to, and (*b*) that he finds the number of measures of coffee cherry that it is necessary to pick to obtain one ton of clean coffee to be much less now than it was when his holding was under the single-stem system.

It has been found that all types of labour, with the exception of any obvious hot favourites for the Mathari Stakes, can prune a multi-stem tree and, all labour does so at pruning time. In consequence the work is done quickly and no time is wasted in bidding for the services of specialised pruning boys or in teaching new ones, during that period of the Coffee farmer's year when it is believed that it is of the utmost importance to push on with the job.

As regards the decrease in numbers of measures necessary to obtain one ton of clean coffee, no explanation is offered and in fact one reason for agreeing to write this article is to obtain from brother farmers the solution to this (to him) phenomenon. Let it suffice to say that, whereas under single-stem, the number of measures to the ton on this farm was always the usual 5/600; for the last four seasons the number has been 438, 464, 440 and 477, the latter figure being that relevant to 1939-40, when in the season just ended, out of a potential crop of 75 tons on the trees, 53½ tons were marketed on a rainfall of 20.71 inches. Comparison of the figures for 1939-40 with those of 1933-34 show that, whereas in 1933 out of a potential crop of seventy-five tons on the trees, only 32¾ tons were marketed on a rainfall of 25.19 inches and at a measure average of 727 per ton last season, with another potential crop of seventy-five tons on the farm 53½ tons were marketed at a measure average of 477, on only 20.71 inches of rain.

It is felt that the above figures (apologies for the inclusion of any figures in these musings) endorse the belief that multi-stem coffee is a drought-resistant method of coffee cultivation and also makes for increased yields.

And now for the consideration of some other possible advantages to be gained from this method of coffee cultivation. From experiment it would appear that mechanical cultivation can be employed very much more easily and efficiently in multi-stem coffee. In fact it is the practice on this farm nowadays to plow even on the diagonal in the coffee, planted 8 ft. by 8 ft., wherever the contour of the slopes asks for it; this has been found to be of advantage in that *erosion* can be more easily combated than in the past and even if it is found necessary to supplement the furrows with small wash-pits in the rainy seasons, it is felt that the presence of a furrow in the Coffee during the dry weather should stop sheet erosion to .a large extent.

Disc harrows are used in front of weeders and this seems to appeal to labour in that it is easy to get at the weeds that are left and weeding here goes more smoothly, efficiently and quickly than it did in the past. Even in blocks where it is impossible to disc before weeding it has not been found difficult to get weeding done possibly due to the fact that the absence of primaries overhanging the weeds, allows of a stroke being made more easily with the jembi.

In addition to the advantages already mentioned in this connection, there is the undoubted fact that pruning costs are greatly lessened, for, at a conservative estimate, the number of trees pruned per boy per day is at least doubled under multi-stem methods.

Lastly there seems to be indication that multi-stem coffee enjoys a certain freedom from pests for, though Mealybug has not decreased it seems from observation that other pests such as antestia and capsid prefer single to multi-stem coffee. At any rate when last an attack of antestia threatened here, spraying tests showed the infestation likely to be more severe in the former type of tree; whilst it has never been considered necessary to spray for capsid to date.

The fears generally expressed in reference to multi-stem seem to be that quality may suffer, that size of bean may be lessened, and that picking will be difficult under this system. So far rather the reverse appears to be the case as regards this farm, for coffee sold in London a year ago, topped the market for the week and has again sold at a price well above the £100 mark this year, unfortunately with no advantage to the owner who had sold locally. On the question of size of bean, from information supplied by neighbours whose coffee is still under single-stem, the percentage of A, and P.B. to other grades, compares most favourably for the season just ended. No particular difficulties in picking have been found though perhaps the provision of six foot lengths of fencing wire with a stirrup at one end and a hook at the other has helped to do away with the pickers' apprehension of their task and, except in the case of a naturally clumsy picker, no picking difficulties. have been experienced in the last few seasons, other than the universal shortage of pickers. It seems that the ease with which fallen cherries are seen offset any prejudice pickers may have to multi-stem.

How best to transfer a single-stem into a multi-stem tree will no doubt remain a matter of debate for years to come but, at the moment planters have the choice of one of the following methods:—

(*a*) Stumping.

(*b*) Cutting off all primaries and leaving the main stem with a breathing sucker at the top.

(c) Cutting up primaries ('Umbrella-ing').

(d) Cutting off all primaries on the eastern side of the tree.

(e) Stumping at about 3 ft. 6 ins. from the ground and establishing 4/6 bayonet heads at about that height; first taking a crop off the skirt left, then one off skirt and heads, finally removing all primaries and taking one or two crops off the bayonets while suckers proper are establishing themselves at the desired height from the soil.

Having tried all these methods, the opinion is presently held that, methods (a) and (b) mean too long an absence of crop for them to be practicable unless quick returns are of little object and it is decided preferable to give the shamba a full year's rest after say, a bumper crop. That (c) does not allow of a good type of sucker being formed unless so few primaries are left that they might as well not be there from a cropping point of view. That (d) does not throw suckers evenly round the main stem but all to one side. So we are left with method (e) which is the one now in use here and which appears to have given the best results so far, always provided that a sufficient number of bayonet heads are encouraged; otherwise they are too stiff and break too easily in picking.

Finally, perhaps it might be of interest to those who have waded so far through this hotch potch, to explain why multi-stem was started here. Following a pestilential outbreak of mealybug in 1929 the trees were no sooner in shape again than antestia, deciding the writer's cup of sorrow to be far from full and his overdraft far from sufficient, arrived to camp on his coffee trees in their millions. For what are now obvious reasons, the use of the then usual bait spray only brought back mealybug in such quantities that it became obvious that control of antestia by that method was obsolete on this farm and that infestation of antestia was cleaned up by the passage of time and hand-picking at the usual enormous expense. A year's rest, only twenty tons of coffee harvested and back came antestia again, so did the mealybug on the only patch baited experimentally, so twelve good saws were bought. In his exasperation he found it a pleasant sensation cutting down coffee trees, the bewilderment of the antestia was amusing to watch, and the kuni seemed to burn better than blue gum, so in all twenty-five acres were stumped. Then, when the stumps had sprouted (for the information of those who may think clean stumping is dangerous, all except two sprouted in twenty-five acres), he heard that multi-stem did not harbour pests so readily, decided to give the method a trial, and, that is the reason why one coffee farmer in Kenya sometimes thinks almost kindly of antestia.

—*Kenya Bulletin.*

A NEW USE FOR MOLASSES

A new market for molasses has been opened as a result of the research work carried on recently by the Industrial Research Bureau of the Government of India to determine the effect of molasses on the strength of lime-surkhi and lime-cement mortars.

The research has revealed that by using molasses for building purposes, the setting time of the mortars is decreased considerably and the tensile strength is generally increased, this being more pronounced during the early periods. It has also been revealed that there exists an optimum percentage of molasses, at which the strength increases uniformly with time, this lying between 10 to 15 per cent. The addition of molasses beyond this optimum point, of course, leads to cracking and consequently erratic results.

—*Industrial Bulletin.*

COMPANY MEETINGS

DUNLOP RUBBER

The following are extracts from the report in *The Times* of the Forty-first Ordinary Annual General Meeting of the Dunlop Rubber Co., Ltd., held in London on 24th April 1940:—

I take it that you will all have read with pleasure the satisfactory results disclosed by the directors' report and accounts for 1939. These did not come altogether as a surprise to your board. They are the outcome of many years of spade-work and careful preparation and planning. . . .

Improvement continued, in spite of the threatening international position, right up to the outbreak of war. Moreover, it was not confined to our own country, but applied practically to the whole of our world business. . . .

The net profit for the year amounted to £2,853,000, compared with £1,501,000 in 1938. . . .

Overseas Companies.—This group shows the great improvement. Its profits are nearly nine times greater than in the previous year, and account for over half the increase in the total profits of the company. . . .

There was a noteworthy expansion in the business of the two latest additions to the companies' factories overseas—those in India and South Africa—and substantial profits accrued to the parent company. The managements of these factories are working in close co-operation with their respective Governments and are thus able to make a useful contribution to the common war effort. . . .

Mr. Riseley asked if the chairman could enlighten them a little more on the reasons for the startling increase in profits from £1,500,000 to £2,853,000. . . .

The Chairman thanked Mr. Riseley for his kind remarks. With regard to what had been described as the startling increase in the profits, that did not come as a surprise to the board, but was the outcome of a policy followed for some years in broadening the basis of their business and establishing factories overseas. Not a single one of their overseas companies had failed this year to contribute to the profits. Their overseas figures were, as he had already stated, nearly nine times what they were in 1938, and represented considerably more than a moiety of the increased profit.

RUBBER AND QUOTA PRICES

The following are the approximate current prices in Kottayam on 25th May 1940:—

Rubber, including export licenses ...	54.00 cents a lb.
Rubber Export Quota	18.00 cents a lb.
1st quality rubber	35.00 cents a lb.

WIRE WOOL FOR SCRAPING COFFEE STEMS

We publish for the information of members the following letter received from Commander H. F. Carey, of Yercaud, together with a note by the Coffee Scientific Officer:—

During my service I encountered this substance Wire Wool, where it was used for certain polishings.

It is very like though not identical with the material with which 'Pan Scourers' are made. So I got some Pan Scourers and tried them on scraping the stems of coffee trees and found them ideal, as they smoothen the stems beautifully without bruising them or taking the bark off to the 'green' or inner bark.

My Pan Scourers cost me 4 annas each, *plus* postage. This is a prohibitive price for a coffee planter, especially if there is much scraping to be done. Also, the Pan Scourer is a 'finished' article which is unnecessary for the purpose, if not indeed undesirable. What we require is the raw material from which we can take off just as much as we need and no more. I have never heard the cost of wire wool, but I imagine it to be between 15 and 25 shillings per cwt., pre-war. I fancy one cwt. would last an estate of 200 acres for five years, or thereabouts. It does not wear out on such a job.

On 30th January last I wrote and asked Col. Brock for information on the subject.

In his reply dated 3-4-40 he regrets he can give me no information himself and has put the matter in the hands of Messrs. Peirce, Leslie & Co., Ltd., London, but they had not then replied to him.

Should any of your members be interested in the subject I would welcome co-operation in procuring this material because I am convinced that it is the very best for scraping, as for instance, for borer (*Xylothropus quadripes*).

Note on Commander Carey's letter on the use of 'Wire Wool' by Mr. W. W. Mayne, Coffee Scientific Officer, U.P.A.S.I.

The idea of using wire wool for scrubbing coffee stems appears quite a good one. At the same time highly efficient results can be obtained with sections of coconut husk with coarse gunny made into rough gloves and such materials are usually readily available locally.

T. HARRISON

Thomas Harrison, aged 83, proprietor of Prospect Estate, Kil-Kotagiri, died on his estate on 21st May 1940.

MARKET REPORT AND PRICES

The Calcutta Market

The new season's report has not yet been received.

RUBBER.—London Rubber on June 4, 1940, 12 3/16*d*. (Buyers).

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on May 21 & 28, 1940
Brooklands ...	... 71/78
Connemara ...	... 58
Deviview ...	... 69
Dunsandle ...	... 70/72
Glenmorgan ...	... 65/66
Heavenford ...	... 56
Kadalaar ...	... 70
Kanniamallay ...	... 96
Mailoor ...	... 57
Manalaroo ...	... 67/68
Neelgiri ...	... 57/59
Pachaimallai ...	... 74
Pannimade ...	... 65/68
Periakanal ...	... 71

South Indian Tea *(contd.)*

	Sales on May 21 & 28, 1940
Selaliparai ...	... 71/76
Singara ...	... 70
Uralikal ...	... 70/75
Velonie ...	... 75
Welbeck ...	... 68

Rubber

	Sale on May 23, 1940
Ribbed Smoked Sheet ...	54⅛
Contract Crepe ...	51¼
Mottled Brown Latex Crepe	48 to 50½
Brown Scrap Crepe ...	47½ to 48⅝

The Madras Market

Current on 6th June, 1940

Since our last report a fortnight ago, business in the local market has if possible dwindled to smaller proportions. The few buying orders which had been in evidence have either been executed or withdrawn, and there are practically no fresh orders coming to take their place. This is probably a perfectly natural corollary and it is unlikely that investors or professional operators will be prepared to increase their commitments until the news from the battle front gives cause for greater confidence. Under these conditions it is natural that the only factor controlling prices is supply and demand. Under present conditions share values bear only a remote relation to their intrinsic worth or dividend prospects. The Calcutta Stock Exchange continues to remain closed, but the Bombay market has been open for the greater part of the period under review for ordinary cash dealings except in those shares on the forward list. Business in the latter will commence next week. Locally, the market has been confined to cash dealings. The security market has ruled steady to dull and business in this section is a matter of negotiations. 3½% Paper closes steady at Rs. 89¾. Early this week Government announced its Defence loan programme which takes the form of (1) war saving certificates with a currency of 10 years, giving an average yield of 3⅛%

free of tax; (2) a six year loan earning interest at 3% per annum payable half yearly subject to tax. Applications for the former are restricted to a minimum of Rs. 5,000 and the latter Rs. 15,000.

Rubber.—Since our last report the price of rubber has hardened in London, advancing to over 12¼*d.* In contrast to this, values of all local shares have shown a definitely easier trend. Very little interest is being shown in local rubber shares and although the selling pressure is only limited, it is obvious that if further realisations have to be made to finance losses incurred in other sections of the market, then further declines are inevitable. The market closes narrow and is likely to be highly sensitive to good or bad news from the war zone. Coorgs, in spite of the announcement of a 20% interim dividend, remain unchanged with sellers at Rs. 27 cum dividend. Cochin Malabars were marked lower at Rs. 5-8 while Midlands were available below Rs. 4. Thirumbadis were also offered at Re. 1-7 while Tropicals and Kalpettas changed hands at Rs. 15. Small business was possible in Travancore Rubbers at Rs. 6-4 with likely sellers over. No business was recorded throughout the period under review in any of the sterling issues. According to latest cable advices, prices are very nominal, Malayalams closing at 26/3*d.*, Rani Travancores at 10/6 and Kerala Calicuts at 1/3*d.*

Teas.—Business in this section was restricted and most issues have recorded declines. Peermades have dropped to Rs. 25-8 sellers and Periakaramalais to Rs. 16-8. Chembra Peaks were also slightly lower at Rs. 3-2. Small business was put through in Nilgiri Neerugundi at 12 as., but there were still sellers over at the close. United Nilgiris were offered at around Rs. 105 while Highland Produce changed hands at Rs. 24-12 as.

FORTNIGHTLY RAINFALL STATEMENT

May 11, 1940 to May 25, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	2·93	N.R.	15·10	18·03	25. Kotagiri ...	2·17	0·84	16·72	19·73
3. Kallar B'dge	3·86	0·61	14·79	19·26	26. Ootacamund...	1·61	0·77	9·61	11·99
4. Koney ...	5·70	0·47	15·23	21·40	27. Yercaud ...	3.49	4·66	8·51	16·66
8. Twyford ...	5·71	2·07	14·54	22·32	30. Devarshola T.E.S. ...	0·65	N.R.	5·92	6·57
9. Pettimudi ...	3·47	3·85	19·21	26·53	31. CALICUT ...	2·99	2·18	6·10	11·27
10. Kalaar ...	3·28	4·05	13·81	21·14	32. Kuttiyadi ...	2·32	...	6·30	8·62
11. Chittavurrai...	2·60	1·83	15·79	20·22	33. Vayitri ...	0·82	0·58	8·90	10·30
12. BODI'KANUR...	...	0·50	8·17	8·67	34. Manantoddi...	0·29	1·30	6·78	8·37
13. COCHIN ...	2·50	2·77	9·38	14·65	35. Bilgiris ...	3·61	3·09	6·93	13·63
14. Mooply ...	1·89	1·80	13·57	17·26	38. Pollibetta ...	0·37	0·13	7·20	7·70
15. Pachaimallai	2·89	1·12	14·32	18·33	39. Coovercolly ...	0·49	0·51	8·89	9·89
16. Mudis ...	3·35	2·01	15·37	20·73	41. Kadamane ...	0·03	2·19	7·67	9·89
17. POLLACHI ...	4·62	0·96	6·21	11·79	43. Merthisub'gey	...	N.R.	8·18	8·18
18. Ropeway Waterfall ...	4·90	0·57	8·86	14·33	45. Balehonnur...	0·01	3·37	6·19	9·57
21. Kerala Estate	3·40	3·88	16·80	24·08	46. MANGALORE ...	0·12	3·83	2·47	3·42
22. Naduvattam	1·35	0·16	9·49	11·00	47. MADRAS ...	...	5·30	0·48	5·78
24. Coonoor ...	1·48	0·19	13·99	15·66					

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The R.R.I. Planters' Bulletin No. 11 of May 1940 contains an article on 'Santobrite' as a preservative of latex. Santobrite is the sodium salt of pentachlorphenol and according to the Rubber Research Institute, Malaya, whilst it cannot be described as being the ideal preservative, it has many features to recommend it.

The essentials of a latex preservative are set out as follows:—

'The first essential of a preservative is of course that it shall enable latex to remain fluid over long periods. It can do so by neutralising the effects of the coagulating enzymes and by killing the bacteria always present in field latex, thus rendering the latex sterile. There are also other requirements which should be satisfied. The material should not be dangerous to handle; it should be free from toxicity which would involve risk either in its use on the plantation or when the goods made from latex preserved with it are in use; it should not have an offensive odour; nor affect the colour and stability of the latex; it should react favourably to manufacturing processes. Moreover, its cost should come within well-established limits. These may be considered as general requirements only. Specific properties of each individual material also have to be considered.

'No material has hitherto been found which fulfils the above conditions completely but ammonia is the most satisfactory. The disadvantages of ammonia, which have been enumerated many times, may be stated briefly as follows:—

(1) It is volatile and unpleasant to work with.

(2) It is a hydrolysing agent, and reacts with substances present in latex, causing variations in stability on storage.

(3) The presence of ammonia interferes with processing in the rubber factory and it has in some cases to be removed before the latex can be utilised.'

Particulars are given of the relative costs of preserving latex with ammonia, and with Santobrite, which suggest that the latter makes possible a substantial saving in costs.

'Santobrite is a relatively cheap material and is used as a preservative in many industries, one of its chief uses being for preserving timbers such as railway sleepers. Under the present fluctuating market conditions relative costs can only be calculated approximately. The prices of Santobrite in May 1939 were as follows (c.i.f., Eastern port):—

10 tons and over	10*d*. per lb.
5 tons and under 10 tons	10½*d*. per lb.
1 ton and under 5 tons	11*d*. per lb.
10 cwts. and under 1 ton	1*s*. per lb.
Less than 10 cwts.	1*s*. plus freight.

If we take the present price of ammonia as 50 cents (Straits) per lb. and the price of Santobrite as the same the relative costs of preserving 1,000 lb. of 38-40% latex in the two cases would be:—

(1) With ammonia
7 lb. at 50 cents per lb. ... = $3.50
(2) With Santobrite (0.3%) and ammonia (0.1%)
1 lb. ammonia ... ... = $0.50
3 lb. Santobrite at 50 cents per lb. = $1.50
$2.00

By using a proportion of Santobrite there is thus at present a nett saving of $1.50 on the cost of the preservative for every 1,000 lb. (100 gallons) of latex. The use of Santobrite involves a small reduction in the dry-rubber-content of the latex, since it has to be added to the latex in the form of a 25% solution; this reduction is only small (about 0.3%).

Sufficient evidence has now been obtained to show that the properties of rubber made from Santobrite-preserved latex appear to be in every way as satisfactory as those of rubber manufactured from ammonia-preserved latex.'

Finally, with regard to the future possibilities, the Bulletin says:—

'The question of chief interest to the producer is whether Santobrite will replace ammonia as a preservative in the future. In this connection it is necessary to bear in mind that the latex industry has been built up from the beginning on the basis of using ammonia as a preservative and the technique of preparing ammonia-preserved latex on the plantation and of using it in the factory is well established. Contracts usually stipulate that ammonia must be used as a preservative unless alternative materials are specifically mentioned. Further it will probably always be necessary to use a proportion of ammonia even if bactericides such as Santobrite come into general use. Their adoption will depend largely on the attitude of the large producers, which will reflect the demands of their manufacturing connections in the consuming countries.

'It is known that Santobrite latex is favoured by some manufacturers and it has been stated in the press that one large producer is now using Santobrite as a preservative. This use may have been dictated by the prevailing conditions regarding supplies but we are of opinion that the use of alternative bactericides such as Santobrite will gradually expand in the future.

'We are informed that supplies of Santobrite are coming into this country, and should any producer be called upon to supply latex prepared with this material, the Institute is in a position to supply any technical advice required regarding its use.'

THE MALAYAN TEA INDUSTRY IN 1939

By D. H. Grist, Agricultural Economist.

PRICES

The wholesale price of tea was fairly steady for the first eight months of the year. From the outbreak of war London prices of tea were not quoted. Table I shows the average prices obtained on the London market for tea of Malayan origin, and, for purposes of comparison, the prices obtained on that market for tea from other countries.

TABLE I

London Prices of Tea

per lb.

1939	Malayan				Ceylon	Java	India North	India South	Sumatra
	Number of Packages		Prices						
	Up-land	Low-land	Upland	Lowland					
			s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
January ...	390	474	1 2·30	11·68	1 2·96	11·70	1 1·18	1 1·72	10·65
February ...	102	140	1 3	11·63	1 3·07	1 0.09	1 1·16	1 1·80	10·83
March ...	132	502	1 2·75	11·63	1 3·95	1 1·25	1 0·68	1 2·44	10·65
April ...	208	316	1 3·50	1 0·12	1 4·49	1 3·40	1 0·91	1 2·95	11·28
May ...	240	294	1 3·42	1 0·25	1 3·89	1 2	1 1·17	1 3·35	11·53
June ...	148	426	1 3·50	1 0·29	1 3·05	1 0·67	1 1·99	1 2·23	11·08
July ...	130	546	1 2·88	11·94	1 2·15	1 0·40	1 2·11	1 0·86	10·09
August ...	432	454	1 2·45	11·91	1 2·83	1 1·47	1 3·94	1 1·07	10·95
	1782	3152							

THE TEA AGREEMENT

Under the first International Tea Agreement, which terminated on 31st March 1938, Malaya undertook that the area planted between the end of 1936 (when Malaya entered the Agreement), and the date of its termination should not exceed 3,000 acres, and that the total area planted in Malaya by the end of the first Agreement should not exceed 6,000 acres. Owing to a number of reasons, the total area planted by the end of the first Agreement was only 4,716 acres.

Following protracted discussions between the Malayan Government and the International Tea Committee, the Government requested the United Planting Association of Malaya to form a Tea Planters' Committee and to appoint a negotiator. This course was followed, and the Committee appointed Sir John Hay as its London representative for negotiating with the International Tea Committee.

The agreement eventually reached was that Malaya would limit planting during the currency of the second Agreement, which terminates on 31st March 1943, so that the total area to be planted might be expected to produce the equivalent of Malaya's probable future tea consumption.

It was estimated that an additional 10,000 acres would be sufficient to ensure this object.

Applications for permission to plant tea during the period 1939 to March 1943 were invited to be made from 6th July to 6th September 1939, and before the end of the year applications had been received for the whole of the area allowed under the Agreement. Licences were issued to cover planting in 1939 and 1940, and the balance of allotment reserved for the applicants, to whom in due course licences will be issued to cover 1941 and 1942-43 (to end March 31st) provided that they have fulfilled the planting programme for 1939 and 1940.

The arrangements have worked smoothly, and although the planting programme for 1939 on most estates could not be fulfilled, owing to unsuitable weather, it is anticipated that the leeway will be made up during the year 1940.

AREA UNDER TEA

The total area planted with tea in Malaya, showing years of planting, is given in Table II. It will be noticed that the figures for 1937 and 1938 differ from those given in the review of the industry for 1938. The present figures are compiled from questionnaires sent to all estates at the end of 1939, and may therefore be considered the more accurate.

The table given in the review for 1938 referred to estates only. A note was made to the effect that there were, in addition, areas of tea planted on small holdings aggregating 559 acres. Almost all these small areas are known to contain very old plants. All these areas, to a total of 533 acres, have now been considered as tea planted before 1930 and included in Table II.

TABLE II

Total Area Planted with Tea, Malaya

(*Acres*)

—	Before 1930	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	Total Area	Reserve Land
Upland areas...	98	325	164	86	43	52	269	336	781	1,002	600	3,756	5,437
Lowland areas...	1,620	188	63	6	—	6	81	88	321	578	336	3,287	3,140
Total...	1,718	513	227	92	43	58	350	424	1,102	1,580	936	7,043	8,577

The distribution of the areas is as follows:—Johore 49 acres, Selangor 460 acres, Negri Sembilan 9 acres, Perak 6 acres, Pahang 4 acres, Penang 4 acres, Malacca 1 acre. It is hoped in 1940 to check up these areas as the total may be considered as a conservative estimate.

Of the total area of 3,756 acres of upland tea, 3,696 acres are situated at Cameron Highlands.

The distribution of the lowland planted areas, by States, is as follows:—Selangor 2,015 acres, Perak 814 acres, Pahang 5 acres, Negri Sembilan 32 acres, Kedah 865 acres, Johore 49 acres, Malacca 1 acre, Penang 6 acres.

The total area of land planted with tea at the end of 1939 was 7,043 acres, of which 936 acres were planted during the year under review. The year was for the most part hot and dry, rains uncertain and not seasonal. These factors materially affected planted programmes on many estates.

PRODUCTION

The estate production of tea in 1939 amounted to 1,313,094 lbs. as compared with an estimate made in 1937 of 1,539,000 lbs. The actual production was 558,619 lbs. upland and 754,475 lbs. lowland, and the estimate was 545,000 lbs. upland and 994,000 lbs. lowland. The production by States in the lowlands was: Selangor 421,448 lbs., Perak 107,164 lbs., Negri Sembilan 3,363 lbs., Kedah 222,500 lbs. These figures tend to confirm the opinion stated in the report last year that the production of tea per acre on upland estates may be greater than the present generally accepted figures, and lowland production rather less than anticipated. Crops in the year under review, however, were generally below the average due to the long dry spells which retarded the 'flushing' of the bushes.

The production of tea on small holdings in the lowlands is unknown, but, judged by an inspection of the condition of many of these small areas, it is probably in the region of 450 lbs. per acre, giving, for the year 1939, a production from this source of 240,000 lbs.

The total production of tea in Malaya in 1939 was therefore 1,553,094 lbs., as compared with 1,467,306 lbs. in 1938 and 1,251,071 lbs. in 1937.

The annual production of tea on estates is shown in Table III. It will be noted that the exports of Malayan-grown tea declined, while sales for local consumption have increased. Stocks of tea held on estates at the end of the year amounted to 59,965 lbs. uplands and 78,332 lbs. lowlands, a total of 138,297 lbs.

TABLE III

Malayan Production and Exports of Tea
(Estates only)

in lbs.

Year	Upland			Lowland			Total		
	Produced	Exported	Sold locally	Produced	Exported	Sold locally	Produced	Exported	Sold locally
1930	...	...	...	95,040	35,730	59,310	95,040	35,730	59,310
1931	...	...	...	127,988	31,000	95,662	127,988	31,000	95,662
1932	4,382	...	3,161	138,694	16,472	123,101	143,076	16,472	126,262
1933	39,440	6,990	29,958	172,449	59,952	118,997	211,889	59,942	148,955
1934	115,874	44,072	64,510	228,497	74,843	152,789	344,371	118,915	217,299
1935	212,927	163,787	30,431	418,735	238,189	173,583	631,662	401,976	204,014
1936	327,796	253,308	79,162	616,970	397,074	210,788	944,766	650,382	289,950
1937	373,767	183,026	182,431	627,304	400,026	229,113	1,001,071	583,052	411,544
1938	507,654	292,296	198,978	709,652	455,007	235,646	1,217,306	747,303	434,624
1939	558,619	265,403	286,211	754,475	382,468	332,261	1,313,094	647,871	618,472

CONSUMPTION

The consumption of tea in Malaya may be taken to comprise the sum of net imports, local sales of Malayan-grown tea, and the produce of small holdings. The total consumption in Malaya in 1939 was, on this basis, 4,392,288 lbs., as compared with 4,150,540 lbs. in 1938 and 5,542,171 lbs. in 1937, or a little over $\frac{3}{4}$ lb. per head of population. No information of stocks of tea carried by dealers from one year to another is available, so that figures of total consumption in any one year must be treated as only approximately correct.

TABLE IV

Net Imports of Tea into Malaya

Year	Black		Green		Total Net Imports	
	Quantity lbs.	Value $	Quantity lbs.	Value $	Quantity lbs.	Value $
1923	...	...	...	...	6,828,977	2,391,264
1924	...	...	...	...	7,176,274	2,783,349
1925	...	...	...	...	7,825,840	3,138,327
1926	...	...	...	...	9,664,809	3,947,613
1927	...	...	...	...	9,539,195	4,041,901
1928	...	...	...	...	8,647,440	3,769,141
1929	...	...	...	...	10,152,422	3,885,275
1930	...	...	...	...	8,732,453	2,872,220
1931	...	...	...	...	6,845,748	1,665,644
1932	3,498,909	725,119	944,474	290,450	4,443,383	1,015,569
1933	2,404,482	537,059	836,135	317,091	3,240,617	854,150
1934	3,264,661	764,634	1,177,582	472,211	4,422,243	1,236,845
1935	2,674,599	717,118	1,384,957	507,068	4,059,556	1,224,186
1936	2,307,188	408,769	1,587,405	498,135	3,894,593	906,904
1937	2,709,302	440,905	2,171,325	625,962	4,880,627	1,066,867
1938	2,170,856	445,939	1,295,060	332,145	3,465,916	778,084
1939	2,653,512	599,327	880,294	241,515	3,533,816	840,842

Imports of black and green tea were not shown separately before 1932.

—*The Malayan Agricultural Journal*, May 1940.

LABOUR DEPARTMENT, U.P.A.S.I.

Notice is hereby given that the Third Annual General Meeting of the Subscribers to the Labour Department of the U.P.A.S.I. will be held at 'Glenview', Coonoor, on Thursday the eighth day of August 1940 commencing at 2-30 p.m.

Resolutions which have to go before the meeting should be in the hands of the Director, Labour Department, Coimbatore, one calendar month before that date.

By order of the Control Committee,

(Sd.) A. H. MACKIE,
Director, Labour Department.

STORIES FROM A PLANTERS' CLUB

'RADIO FAR LAND'

By 'Jeff'

'I wonder when the Navy is going to do something about Far Land', remarked the Oldest Planter casually; but the casualness was overdone: the old fellow was obviously bursting with suppressed news and self-importance. . . . Receiving, as he had hoped, no reply (for, as readers of the *Chronicle* have good reason to know, the O.P. can be a monumental bore on occasions—and we feared the worst) he continued:—

'As the Report, which I have sent to the Admiralty, will have been released for publication by now, I am free to relate to you the extraordinary facts of this affair as they occurred. . . .'

'You will remember that Merston was called up recently. And here I will digress to remark that Merston was *over forty*, and yet I see all you young fellows still sitting here every evening, instead of, more appropriately, in a troop-carrier or a pursuit-plane. Worse! There are, even, retired officers among you, of many years service, still frittering away their time mismanaging tea estates when they should be hurling themselves against enemy tanks on the Western Front!' And here the old gentleman glared accusingly at Jeff: a wizened and purblind young fellow of rising forty-seven, whose diminutive size had procured for him a prolonged immunity from enemy shot and shell, between 1915 and 1919, with a consequently prolonged (and profoundly unappreciated) experience of trench warfare.

Leaving this superannuated warrior to contemplate the probable result of the suggested tank-impact, with the appropriate emotions, the Oldest Planter continued:—'Well, Merston, before leaving his estate, bequeathed me his experimental wireless set, and it was through this instrument that I got, quite unexpectedly, into touch with Radio Far Land.'

'After listening to the 9-30 p.m. News Bulletin, I was idly twiddling one of the knobs on Merston's set when I heard a thin-sounding voice coming through on no recognised wave-length. The voice spoke in English, and I was in time to hear what was an explanatory introduction to the broadcast. The speaker said that only a very few people in the world would be able to hear his message as his transmitter was of an experimental type, and he mentioned Merston as being the owner of one of the few possible receivers. The Government Wireless Station on Far Land was, he said, in the hands of the Germans; so that his instrument was the only link between Great Britain and that Island.'

'As it is quite likely that I am the only person with whom the Far Land operator has so far been able to get into touch, I at once made careful notes of his broadcast, and despatched them by Air Mail to the First Lord of the Admiralty; and it was fortunate indeed that I happened to turn that knob at the psychological moment. . . .'

'Far Land, as you probably know, is one of the many floating islands of the South Pacific, and is about the same size as the Isle of Wight. It was colonized by people from all parts of the British Isles, some fifty years ago, and so can be regarded as a microcosm of the Mother Country, except as regards the small and contented Polynesian population, with their King, who reigns under the suzerainty of the British Government. Cannibalism has long been discarded by the native population as definitely *démodé* and the aboriginal inhabitants are now well on their way towards a high standard of civilization.'

'From the information I received by Radio, the island was taken by surprise, and most of it has been occupied by an overwhelming German force which had been lurking in a Brazilian harbour before the war, with this object in view. A small British garrison still holds out, however, in the mountainous interior of the Island, and it is from this stronghold that the Radio messages are sent. The main object of the broadcasts, of course, is to give the British Admiralty the approximate position of the Island and to request that a relieving squadron may be sent to evict the Germans as soon as possible; but some description of the life the Islanders are having to lead under German domination may be of interest to you, as it accurately describes the sort of régime which the enemy would like to inflict upon Great Britain.'

'Refugees, from the German-occupied area, report that the invaders' first act was to impose Martial Law and institute the "Gestapo". This latter organisation at once introduced the usual vexatious ordinance, such as Curfew and so on, including humiliating dress regulations under which the Polynesian Far Landers were prohibited from wearing European clothes. Even the highly respected Royal Family came under the ban, and so have had to discard their Savile Row suits for the palm-leaf kilts, and coconut oil, of their ancestors. So far as the ladies are concerned, it has to be admitted that their present "creations", plus a sharks-teeth necklace or two, are definitely more attractive than the unsightly "Mother Hubbard" smocks insisted upon by the rather puritanical missionaries who previously dictated the feminine fashions.'

'All Jews are, of course, herded into a Concentration Camp; and, though it has to be recorded, in all honesty, that the rest of the population are bearing up under this enforced separation with almost unseemly cheerfulness, it is a matter for congratulation that the Native Police, who are now in charge of these Jews, are reacting honourably to their English training, and refuse to employ Gestapo methods to enforce discipline.'

'A Sports-Palast has been built at Farport, in which the Germans have attempted to popularize their rule by staging boxing contests, and so on; but this has not worked out quite as they expected, due to the German referees' incurable habit of awarding all fights to their own countrymen, irrespective of points and knock-outs, to say nothing of the deplorable Nazi habit of taking off the gloves in the middle of a round and hitting below the belt when the non-German looked like winning—boxing being considered as a branch of "total" warfare, it would seem. . . .'

'It has to be recorded, to his honour, that the Captain of one of the German cruisers, who belonged to the small minority of good sportsmen among them, protested vehemently against these enormities; but he was very quickly ruled out of order, and found himself under the surveillance of the Gestapo for his trouble. Indeed (such is the fanaticism of these gentry), the 100% Nazis proclaimed that, as the gallant Captain's name was von Prtschtkszlmsky, he was obviously of Polish origin, and therefore "no true German"; and when they went on to elicit the damning fact that his great great grandmother had been of Finnish extraction, von P. was lucky to escape internment in the Concentration Camp for Non-Germanic Crypto-Aryans.'

'Of course the invaders had a stab at starting a Fifth Column by attempting to suborn the few Mosleyites in the Island, as they were apparently under the ludicrous misapprehension that all such persons are necessarily pro-Nazi. They were very promptly disillusioned, however, when one of the aforementioned Mosleyites was caught in the act of blowing up the largest petrol and oil dump in the possession of the Germans. The fact that this Patriot, after facing the Nazi firing squad stoically enough, died without shouting a slogan of any kind, convinced the Germans that they had nothing to hope from that quarter, and that "unrestricted frightfulness" was the only course to take with these obdurate English.'

'But even "unrestricted frightfulness" has it's limits. You can't put an entire population up against the wall and shoot them for refusing to say "Heil Hitler"—and the Far Islanders, as one man, flatly refused to say it, except in derision, or at the most inappropriate moments. . . . Indeed, this "Heil Hitler" business is the cause of constant friction between the Islanders and their temporary over-lords, and leads to some not unamusing incidents. For instance, there was the case of the little Cockney foreman, who was hailed before the German magistrate for being out of doors after "curfew". When asked, menacingly, for an explanation, he piped up (all in one breath): "Well Gov'nor, I was only trin' to walk orf the effecks of *too much sossidge* and pile ile 'Itler!" The Magistrate, being a gross feeder himself, and flattered at being (as he thought) mistaken for H.E. the Governor, decided that the explanation was reasonable enough, and that the attempted "heiling" of Hitler was very gratifying (!)—and dismissed the case.'

'Then, at the other end of the social scale, there was the incident of the ex-Governor's daughter, Lady Ophelia Catchpole-Grandisson.'

'For some time this unfortunate lady had endured the attentions of an Ober-Leutnant on the German Governor's Staff. Matters came to a head when the Ober-Leutnant proposed matrimony and became violently amorous in the process; whereupon, his intended bride bit his ear almost in two, explaining sweetly that it was an Old British Custom, and that a girl can't be expected to know her true feelings about a suitor until she has bitten his ears similarly at least half-a-dozen times. . . .'

'A marked coolness has been noted, since, on the part of the Ober-Leutnant, and it is considered unlikely that the Anglo-German wedding-bells will ring at the Lutheran Church, Farport, after all.'

'From the foregoing, and a host of similar incidents, it would seem that our people in Far Land are keeping their end up very well; though they will naturally be pleased to see that relief squadron arriving.'

'The whole story seems so incredible that I sometimes wonder if I didn't dream it all', declared the Oldest Planter. 'Indeed', he went on, 'I *was* feeling rather drowsy on the night the message came through. . . .'

'Yes', sneered Hybrow, 'and I suppose you dreamt that you wrote that Report which you mentioned just now? The fact of the matter is: You haven't inflicted any of your balderdash on us for some time, and thought it about time that you *did*!'

At this, the Oldest Planter rallied gamely: 'At any rate' he said 'you get my balderdash, as you call it, for *nothing*; whereas, I perceive that you have recently invested eight annas on the "Spillikan Crime Special" which I see sticking out of your pocket.'

Rising with considerable dignity to take his leave, the Oldest Planter delivered his parting shot: 'I have no wish further to interrupt your literary studies, Hybrow,' he remarked silkily, 'and you may now get back to "The Body on the 'Bus".'

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 10th June were:—

Rubber, including export licenses ...	... 55.00 cents a lb.
Rubber Export Quota ...	... 18.00 cents a lb.
Rubber 1st quality ...	... 36.50 cents a lb.

THE ANNAMALAI HILL CATTLE SOCIETY

The eighth annual show of the Society was held on 13th January at Valparai. The Society was formed by the planters in order to encourage the breeding of a better type of cattle on their estates and also to improve the cattle belonging to the estate subordinates and estate coolies by grading up with bulls of pure Sindhi breed. During the last five or six years more than 30 pure-bred Sindhi bulls have been purchased by these planters for this purpose, 23 of which have been obtained from the Live-stock Research Station, Hosur Cattle Farm, and eight or nine others direct from Karachi. All the cows belonging to the estate coolies and staff are covered by these Sindhi bulls free of cost and there is great demand for these bulls in this district.

Most of the foundation cows were the ordinary local ones brought up by the estate coolies and staff from the plains around Pollachi, etc. Some of the planters and also the estate subordinates possess pure Sindhi and cross-bred cows. The cattle thrive well on the buffalow-grass which grows on the swampy lands in these hills. Sindhi bulls have been used for grading up these local cows and this has created much interest in cattle breeding amongst the mistries and coolies and a good strain of graded Sindhi cattle is being evolved in the district. The offspring bear a strong resemblance in type and colour to the Sindhi and their performance at the milk-bucket are awaited.

KEEN COMPETITION FOR PRIZES

The number of entries at the show this year was lower than usual due to a mild outbreak of foot and mouth disease in the district. Very few cattle came from the Mudis district. The entries this year numbered 268 as against 349 last year. Both the condition and quality of the cattle showed a marked improvement over last year's show and it was a pleasure to see such animals especially when it is remembered that 95 per cent of the 2,500 head of cows belong to the labour force. The coolies are quickly learning the points of a good animal and competition for prizes is very keen. In the classes for graded heifers belonging to the mistries and coolies, there were as many as 45 and 39 entries in two classes and the judges had a difficult time in selecting the prize-winners. Most of the prize money is collected locally.

It is not difficult to control cattle breeding work in these hills. All young undesirable bulls are castrated by the veterinary staff and it is hoped to start the registration of the stock in another year or so. In course of time this district should be in a position to supply a type of good milch cow of Sindhi breed to the dairymen in Coimbatore, Madura and Malabar districts. It is in the breeders' own interests to retain their best Sindhi graded female stock in the district until they have fixed a good type of local Sindhi breed.

—*Indian Farming*, May 1940.

TEA QUOTA PRICES

The Quota prices ruling in South India on 19th June were:—

Tea Export Rights ...	4 annas 6 pies per lb. (Nominal)
Internal Market Rights ...	1 pie per lb. (Nominal)

In Calcutta Export Quota was quoted at 5 annas per lb., and Internal Consumption Quota at 2 pies per lb.

DISTRICT NOTES

CENTRAL TRAVANCORE

Minutes of the Sixty-sixth Annual General Meeting of the Central Travancore Planters' Association held at the Vandiperiyar Club on Saturday, 18th May 1940, at 10 a.m.

Present.

Messrs. W. F. Inman (*Chairman*), J. S. Wilkie, A. R. St. George, H. Clarke, A. B. Spence, A. L. G. Murray, A. G. S. Raju, C. Paterson, M. S. Calderwood, A. Fullbrook Leggatt, W. M. Stantan, D. Tweedie, G. G. Milne, T. M. Lewis, G. A. Cooke, J. F. Caldwell, A. V. Thomas, I. N. James, R. F. Vinen, H. Gibbon, W. A. J. Milner, M. R. Coghlan, F. Bissett, G. Newton, W. F. Anderson (*Honorary Secretary*).

By Proxy.—Mr. R. P. Roissier.

Visitors.—Sir C. P. Ramaswami Aiyar, K.C.I.E., LL.D., Messrs. S. Chidambaram, K. P. Padmanabha Menon, S. J. Bruford, T. W. Urquhart Park, S. C. H. Robinson.

The Chairman asked Sir C. P. Ramaswami Aiyar, the Dewan of Travancore, to kindly open the Sixty-sixth Annual General Meeting.

Sir C. P. Ramaswami Aiyar with a few well chosen words declared the meeting open.

The Honorary Secretary then read the notice calling the meeting.

COMMITTEE'S REPORT

The Committee's Report for the year 1939-40 printed and circulated to all members, read as under:—

The Committee have the honour to submit to members this report on the proceedings of the Association for the year 1939-40 together with a statement of accounts for the same period.

Chairman and Committee Members.—The Chairman, Mr. W. F. Inman, and the Honorary Secretary, Mr. W. F. Anderson, were re-elected at the last Annual General Meeting held on 13th May 1939.

The members of the Committee, nominated by their respective groups were as follows:—Messrs. G. Newton, C. Paterson, J. S. Wilkie, J. M. Wilkie, W. A. J. Milner, M. R. Coghlan, W. F. Inman, A. G. S. Raju.

The members of the Committee as nominated served throughout the year without change.

Meetings.—During the year under review an Annual General Meeting and three Quarterly General Meetings were held. The average attendance for the four meetings was 18. The Committee met five times during the period.

Membership and acreage.—Membership shows no change over the preceding year and comprises 42 estates representing 23,404 acres of Tea and 268 acres of Cardamoms. There are also one Personal Member and one Firm Member.

The restricted tea crops for the year 1939 and in 1938 were:—

1939	12,345,486 lbs.
1938	11,110,578 ,,
Increase	1,234,908 ,,
Yield per acre for 1939	537,75 ,,

Finance.—The rate of subscription remained at 1 anna 9 pies per acre and all members paid their subscription in full.

The audited accounts of the Association have been in your hands for the statutory period and show an excess of income over expenditure of Rs. 439-4-1 which has been carried forward to next season's accounts.

The budget for 1940-41 has been circulated to all members of the Association with the recommendation that subscription be at 1 anna 9 pies per acre.

Planters' Benevolent Fund.—The Committee are pleased to record a further improvement in the support given to this Fund. The total amount contributed this year and remitted to U.P.A.S.I. was Rs. 1,100, an increase of Rs. 55 over last year.

Indian Tea Control.—Your Committee records with pleasure the inclusion of Mr. J. S. Wilkie in the personnel of the Indian Tea Licensing Committee.

U.P.A.S.I.—Your Association has been represented at all its General Meetings by delegates to whom our thanks are due. Mr. W. A. J. Milner has continued to serve on the Tea Product Section Committee and to him we beg to tender our appreciation.

Labour Department.—Your Committee records their indebtedness to those concerned in its management for the efficient service and smooth working. Mr. M. R. Coghlan has been Chairman of the Labour Department throughout the year and our interests have been in good hands.

Political.—Your Association's representatives to the Sri Chitra State Council were Mr. Eric Hall (resigned) and Mr. T. W. Urquhart Park and to the Sri Mulam Assembly by Mr. J. W. Tolson. Your Committee records their great appreciation to these gentlemen for their services.

General.—

Medical Grant.—The Committee records its appreciation for the support given by His Highness's Government to our two grant-in-aid hospitals. The grant in respect of both hospitals has been paid regularly.

Revision of Memorandum and Articles of Association.—This matter has not yet been disposed of but it is hoped that it will be shortly.

In conclusion your Committee wishes to record their great appreciation to all members, non-members, and other District Associations who have so courteously assisted us throughout the year under review.

W. F. INMAN ... *Chairman.*
G. NEWTON,
M. R. COGHLAN,
J. S. WILKIE,
W. A. J. MILNER, ... *Members.*
C. PATERSON,
A. G. S. RAJU,
J. M. WILKIE.

It was proposed from the Chair:—'That the Committee's Report for the year ending 31st March 1940 be and is hereby adopted.' *Carried.*

CHAIRMAN'S ADDRESS

The Chairman addressed the meeting as follows:—

We are honoured in having with us at our Annual General Meeting Sachivottama Sir C. P. Ramaswami Aiyar, the Dewan of Travancore.

Since Sir Chetput succeeded to his high office, Travancore has, under the wise and beneficient inspiration of His Highness the Maharajah, made history in many directions. In the way of social reform, education, industrial development and scientific research, Travancore has made remarkable advance which does credit to the statesmanship of our Dewan.

Sir Chetput is not only Dewan of Travancore but also an all-India figure. He came to this State after ripe and varied experience as an administrator in the Madras Presidency and in the Government of India, as a wise counsellor on constitutional matters to many of the leading Indian States, and as one of the architects of the Federation which, though its realisation may for the time being be postponed, is nevertheless the basis upon which the unity of this great country can be achieved.

It is not surprising that one with such a career behind him should, when he came to Travancore, have attracted the attention of the public and the press throughout India.

His presence with us today is a token of his deep interest in the great planting industry in the State. It is not necessary for us to assure him of our deep and sincere loyalty to the person of His Highness the Maharajah. Nor need we assure him of our desire to co-operate with him and his Government in every way possible in the development of the resources of this State and in its progress through orderly constitutional growth in both the legislative and administrative spheres. Sir Chetput has, during his administration as Dewan, shown that his loyalty and service to the State of Travancore are not incompatible with that wider loyalty and service to India as a whole.

He has also indicated in no uncertain terms the attitude of Travancore and its Government to the present war. His Highness the Maharajah made a declaration of instant loyalty to the person of His Majesty the King-Emperor and to the cause to which the Allies have now dedicated their strength. That is tremendous encouragement and is likely to call forth from His Majesty's Government in like measure not only gratitude but also an assurance of loyalty to those obligations to the States which have been undertaken in the past and will undoubtedly be fulfilled in future.

I am also glad to have an opportunity of welcoming on your behalf at this meeting today Mr. K. P. Padmanabha Menon, Electrical Engineer to Government, Mr. S. J. Bruford, Civil Engineer to Government, Mr. T. W. Urquhart Park, our Planting Member in the Sri Chitra State Council and Mr. S. Chidambaram.

Turning to a review of the Association's activities for the past year, you will see from the copy of the Committee's Report and Accounts that is in your hands, much of what has been done and how the Association stands.

We again have the honour to have His Highness the Maharajah and Their Highnesses of Travancore staying in Peermade for the hot weather and we hope that the improvements and additions to the Palace indicate that their visits will be of yearly occurrence.

The season under review has been normal as far as the monsoons were concerned but again we have suffered a drought of unparalleled severity—even worse than last year. Rains have come at last but so late that it looks rather as if many estates will have some difficulty in making up leeway.

The chief event that came to pass during the year and one that overshadowed all others was the outbreak of war on the 3rd September last; and for the second time in 26 years we are plunged into the tragedy of a Great War. To what extent hostilities will spread cannot yet be foretold or what difficulties and losses lie ahead of us but no one can surely have any illusions that the struggle can be other than both long and bitter. The response from the Dominions, India and the Colonies has been spontaneous and magnificent and the very close co-operation that exists between the British Commonwealth and our French Allies, together with the unshakable determination of both to win through to ultimate victory, to right the wrongs of the crushed small nations, and make the world a safe place for free people to live in, gives us great hope.

At the outbreak of war all tea in Britain was taken over by the Government and bought by them on the basis of the last public auctions held in London during the latter half of August. After a period of negotiation, a short-term contract was concluded in December by estates with the Food Controller for specified amounts of tea to be produced up to the end of 1939, on the same price basis as that for the previously requisitioned tea. Now, a long-term contract has just been offered to producers for 90% of their export quota allotment for the current calendar year, the price level of which is fixed on the average prices already obtained by the individual estate for the three basic years of 1936, 1937 and 1938. In deciding the quantity to be offered under this contract the Food Controller has made allowance for outmarkets being supplied direct. Teas will be taken over f.o.b. at the port of shipment by the Controller, advance payments made at the time of shipment, and the balance paid after a given time. Furthermore an allowance of 1*d.* per lb. has been made for this year to cover the increased cost of production.

There has been a good deal of criticism over the delays and at the one time apparent muddle that existed before negotiations for a satisfactory form of contract were finally concluded, but on the whole I think we have come out with a very fair deal. There is every chance that producers will continue to make reasonable profits and our thanks are due to those in London who have looked after our interests during these difficult months. We are fortunate in having a well organised industry.

I do not want, however, to give the impression of undue optimism for there are many serious troubles ahead. Costs are certain to rise, and in the case of packing and other materials there is the possibility of difficulty in obtaining supplies in sufficient quantities; and above all there is the ever-increasing burden of taxation, which is essential to supply the vital sinews of war.

I should like to refer to, and record our appreciation of, the steps taken by the Dewan and the Government of Travancore for the control of prices of commodities and foodstuffs immediately after the outbreak of war, thus checking the profiteering and unnecessary price-raising that would inevitably have occurred, and maintaining a stable situation in the State. This control may well have been an example to other parts of India.

An event of considerable importance to us here has been the inauguration by our Dewan in March of the Pullivasal Hydro-Electric Scheme. As you know this is not the first time that the Dewan's name has been connected with Hydro Electricity as it was he who initiated the Pykara Scheme in British India some years ago while he was a Member of the Government of Madras. We have been offered electric power, brought to our doors, at the same rates as those now given by the Pykara Scheme. These rates are cheap and at least competitive in most cases with existing motive power. We have further been promised, in the event of sufficient immediate support being forthcoming, that work on the line will be commenced immediately after the monsoon. I have reason to believe that adequate support—enough to justify a start being made—is definitely to be given.

The trunk telephone has recently been brought to Peermade and now we are connected up not only with other parts of Travancore but with the whole of the outside world.

Labour legislation has loomed large in our deliberations. The Rules under the Travancore Factories Regulation have been in force since January last. Copies of these Rules have so far been unprocurable but it is hoped that they may be available to members at an early date. The Workmen's Compensation Act is also in force and can only be regarded as a sound piece of legislation. The care, welfare and housing of our labour are matters that we have always before us and we can assure Government not only of our readiness to co-operate but also of our appreciation of opportunities of expressing views, out of our long experience, on any labour legislation that may be contemplated.

The Certificate of incorporation of the Association of Planters of Travancore was received in August last and the new Association is now a going concern. It takes the place of the old Travancore Combined Planters' Association and is designed to meet modern conditions and fulfils a wider and more useful purpose than was possible with the old Association. It cannot be emphasised too often that one of the chief aims and objects of the new body is to represent the opinion of the whole planting community of Travancore, both Indian and European.

Your Committee have had our new Articles of Association under consideration for some time past and I am sorry to say that various technical delays have precluded any chance of our being able to place them before you today for your confirmation.

I made some reference last year to the very valuable work that is being done by the Indian Tea Market Expansion Board and the fortunate position we are in in having such a useful market at our doors. Recent reports do everything to bear out that opinion. The consumption of tea in India is growing satisfactorily every year and a generally steady market maintained. The campaigns in foreign countries have of necessity, owing to war conditions, to be kept under revision and many difficulties are presented. Figures from the U.S.A. however show a marked increase and we can be sure that, in other countries, every opportunity will be taken by the Board to do what they can.

I should like to take the opportunity of endorsing the tribute made in the Committee's report to those gentlemen who have acted on our behalf and represented the Association on various bodies. All work of this nature definitely means the giving up of a large amount of spare time, to what extent may not be always realised.

In conclusion I would like to thank the members of the Committee for their help and support but most especially to Mr. Anderson, our Honorary Secretary, for all he has done.

I am much obliged to you for the honour you have done me in electing me your Chairman and now, at this meeting, I place my resignation in your hands.

Sir C. P. Ramaswami Aiyar

The Dewan, Sir C. P. Ramaswami Aiyar, K.C.I.E., LL.D., made response to the Chairman's speech and paid a tribute to the pioneering work done by the planting community, both Indian and European in Travancore, and to the manner in which they had organised their industry.

Speaking about Travancore's contribution for the War, he said:—

'H. H. The Maharaja has paid six lakhs of rupees, a larger monetary contribution than has been offered by any Indian State excepting Hyderabad. His Highness has also offered the services of his whole armed forces, which will be kept in readiness for such work as may be assigned to them. His Highness' Government are also helping the British Government in various ways in the prosecution of the War.

'We have striven in our humble way and to the extent possible to us, to co-operate in the great and mighty struggle in which the Allies are now engaged. In this struggle, I am glad to say that the Indian States generally, and certainly Travancore, are ranged wholeheartedly, loyally, spontaneously with the British Government and with the British community in trying to achieve that victory which is so necessary and essential for the stability of social order and the progress of the country.'

'You have,' the Dewan added, 'referred to His Highness' stay in Peermade and have expressed the hope that those improvements that are obvious in the Palace and elsewhere may be an indication that there will be annual visit. I am glad indeed that His Highness has made up his mind to spend the hot weather in some hill resort or other in Travancore. We are also trying to locate a salubrious hill station in South Travancore, which if completed, His Highness may well visit every alternate year.'

Referring next to planting, the Dewan said: 'It lies in the hands of the planting community of Travancore to solve one of our most imminent problems. That problem is that Travancore has to import all its food and has to export things like rubber, pepper, ginger and copra. At present the foreign market for pepper, ginger, etc., is almost lost to us. Formerly much of the copra went to Italy, Germany, France and other countries. But France's African Colonies are producing coconut and palm oil. The United States of America, which was importing our cashew-nuts, is fast developing her tropical dependencies for such commodities. The result is that some of our big markets have disappeared.

Travancore today is wholly indebted to Burma for food-supply. The configuration and level of the country is such that cultivation is not likely to produce even a third of the needs of Travancore, especially at the rate at which the population is multiplying. I have been telling various people that we might attempt some kind of organised terraced cultivation of rice. It strikes me that there should be a possibility of growing crops like potato and soya beans.'

The Dewan next referred to the labour legislation introduced in the State to improve the relations between labour and capital.

Mr. J. S. Wilkie then replied to Sir C. P. Ramaswami Aiyar as under:—

'I have been accorded the privilege of expressing to you the thanks of the members of this Association for having given to us this part of your valuable time, and for having honoured us by attending this our Annual Meeting and for addressing us. I think the members would like me to give the assurance that we shall keep in view the various points which you have mentioned and to which you have asked our consideration. I venture to hope, Sir, that this will only be the first of many occasions on which we may be similarly honoured by your presence.

'Mr. Chairman and members, I would ask you to join me in according to Sir C. P. Ramaswami Aiyar our very sincere thanks.'

Hydro-Electric Scheme and Trunk Telephone Service.—

(1) With the consent of the meeting this item was considered next and Mr. K. P. Padmanabha Menon. Electrical Engineer to Government, very kindly answered numerous questions raised by members on the matter. The meeting's appreciation to Mr. Menon for giving members this opportunity of discussion was duly recorded.

(2) Read and recorded letter from the Telephone Assistant Engineer regarding subscription rates for installing telephone connections. The Honorary Secretary was instructed to circulate the letter to all interests for their information.

Minutes.—The Minutes of the third Quarterly General Meeting held on the 27th February 1940 which had been published in the *Planters' Chronicle* of 30th March, were taken as a correct record and signed.

Accounts.—Printed copies had been circulated to all members. In accordance with Section 43 of the Articles of Association, the Honorary Secretary read the Auditor's Certificate.

As no member had any questions to ask, it was proposed by Mr. G. Newton and seconded by Mr. H. Clarke 'That the C.T.P.A. Accounts for 1939-40 as printed and circulated be passed.' *Carried.*

With the permission of the meeting the election of Auditor and Office-bearers was deferred until after the discussion of the special business.

Correspondence.—

(1) Read and recorded letter from the District Magistrate, Kottayam, regarding the impossibility of raising the cattle pounding fees.

(2) Read letter from Mr. M. R. Coghlan regarding the circulation of I.T.A. circulars. The Honorary Secretary was instructed to take this matter up with the U.P.A.S.I. requesting their views on the matter.

U.P.A.S.I.—

(*a*) *April Meetings.*—It was duly recorded that the proceedings of the April meeting had been published in the *Planters' Chronicle* of 11th May 1940.

Tea Product Section.—Publication of the Minutes in the *Planters' Chronicle* of 11th May 1940 was duly recorded.

(*b*) (i) *Labour Department.*—Mr. M. R. Coghlan addressed the meeting and informed members of the administrative control of the Department during the year.

The Chairman proposed a hearty vote of thanks to Mr. Coghlan for his appreciative address and for the work he had undertaken on the Control Committee.

(ii) Read and recorded letter from the Secretary, U.P.A.S.I., re. labour policy and procedure. The meeting fully endorsed the proposal.

(*c*) *S.I.P.B. Fund.*—The meeting was informed of the generous subscriptions received from members and estates in this district which for the year under review totalled Rs. 1,100.

(*d*) *Tea Scientific Department.*—The U.P.A.S.I. letter of 3rd May regarding the future activities of the Department was duly considered and it was decided to leave this matter in the hands of the Committee for consideration.

Indian Tea Market Expansion Board.—

1. Read and recorded U.P.A.S.I. letter dated 13th May 1940 re. sales of tea to the Labour Officer and Welfare Superintendent of the Sassoon Group of Textile Mills, Bombay.

2. Mr. W. A. J. Milner tabled his address and in view of the shortness of time the Honorary Secretary was instructed to forward a copy of the address to all members for their information.

Memorandum and Articles of Association.—This matter having been dealt with in the Chairman's address no further discussion took place.

Budget 1940-41.—This had been circulated to all members and it was proposed from the Chair 'That the budget as circulated be confirmed and that the cess be fixed at the rate of 1 anna 9 pies per acre for 1940-41.' *Carried.*

Inspection of bazaars.—The meeting noted with approval that inspections of local bazaars had been continued by the Health Officers. In view of the assistance given by gentlemen in co-operation with the authorities the Chairman proposed 'A vote of thanks to those gentlemen who have very kindly given up their time to inspect the bazaars for the benefit of the district.' *Carried.*

Election of Auditor.—Under Section 41 of the Articles of Association Mr. Gibbon proposed and Mr. Milner seconded 'That Mr. V. K. Cheriyan, Government Certified Auditor, be elected Auditor for 1940-41 and that his remuneration be fixed at Rs. 50 inclusive of travelling expenses.' *Carried.*

Election of Office-bearers 1940-41.—The office-bearers were elected in accordance with Rules 2 and 3.

Chairman (by ballot).—Mr. W. F. Inman.

Members of Committee.—

Group I. Messrs. G. Newton, C. Paterson.
Group II. Messrs. J. S. Wilkie, W. A. J. Milner, J. M. Wilkie.
Group III. Mr. M. R. Coghlan.
Group IV. Mr. W. F. Inman.
Group V. Mr. A. G. S. Raju.

Honorary Secretary (by ballot).—Mr. W. F. Anderson.

District Sports Committee (Honorary Secretary).—Mr. M. W. Hoare.

A.A.S.I. Representative.—Mr. O. W. Horrocks.

The Chairman proposed a vote of thanks to Messrs. M. W. Hoare and O. W. Horrocks for the past year's services on the District Sports Committee and A.A.S.I. representative.

Mr. A. R. St. George with a few well suitable words voiced the appreciation of the meeting to Mr. W. F. Inman for his past years' services as Chairman of the Association and the District in general and expressing a like success for the ensuing year.

Any other business.—

(1) Mr. T. W. Urquhart Park, M.L.C., addressed the meeting on the political aspects and which was much appreciated by the meeting. The points raised in his address gave much food for thought and which would no doubt be taken up by all interests in the near future.

The Chairman proposed a hearty vote of thanks to Mr. Park which was carried unanimously.

(2) *Cardamom research.*—Mr. M. R. Coghlan addressed the meeting regarding the meeting of the *ad hoc* Sub-Committee and outlined the proposals which had been contemplated.

The meeting's appreciation to Mr. Coghlan for his address was duly recorded.

With a vote of thanks to the members of the Vandiperiyar Club for the use of the premises, the meeting was declared closed.

W. F. ANDERSON,
Honorary Secretary.

W. F. INMAN,
Chairman.

NILGIRIS

Minutes of the Annual General Meeting of the Nilgiri Planters' Association held at "Glenview", Coonoor, at 3 p.m. on 28th May 1940

Present.

Messrs. C. Vernede (*Chairman*), E. G. Cameron, S. H. Dean, G. H. Waters, E. L. Koechlin, P. G. Gallaher, A. G. Acaster, J. R. N. Pryde, M. Hawke, and E. F. H. Gerrard (*Honorary Secretary*).

The Honorary Secretary read the notice calling the meeting.

The Minutes of the Extraordinary General Meeting held on 18th July 1939 having been published in the *Planters' Chronicle*, were taken as read and confirmed.

HONORARY SECRETARY'S REPORT

The Honorary Secretary read his report for the year as follows:—

Mr. Chairman and Gentlemen,

I beg to submit my report for the year ending 31st March 1940.

Meetings.—During the year under review, one Annual, one Extraordinary and three Committee meetings were held and the attendance was satisfactory.

Membership.—11,440.77 acres Tea, 2,675.67 acres Coffee and 29.25 acres Rubber, making a total of 14,146.29 acres subscribed to this Association for 1939-40. This acreage represents an increase of 1,070.98 acres from last year. This increase is due to the election of Dunsandle and Lovedale Estates, Glenmorgan Estate and R.V. Estate, and also extension on member Estates. The subscription remains the same as last year i.e. 9 pies per acre. For 1940-41 the above-mentioned acreage will be subscribing to the Association.

Personal Membership.—Mr. P. B. Green of Thiashola Estate joined the Association as a personal member, and during the year we have lost one member, Mr. W. A. Cherry whose death was regretfully announced. The total membership now is 13 of which 4 are honorary members.

The collection of subscription is, as usual, done by the U.P.A.S.I. and is satisfactory. A small amount has remained unpaid by estates, but I trust by now this has been received by the U.P.A.S.I.

Accounts.—These have been duly audited and a copy of the Balance Sheet, Income & Expenditure Account and Receipts and Payments Account have been sent to all members. The certified copies of accounts are now placed on the table for your consideration and approval. I am glad to report that there has been an excess of income over expenditure amounting to Rs. 102-15-10.

Fixed Deposit G.P. Notes Rs. 200.—This remains the same and the interest of Rs. 5 accrued during the year was credited in the current account with the National Bank of India.

Post Office Savings Bank Rs. 750.—This amount now stands at Rs. 760 together with the interest of Rs. 10 accrued during the year.

Fixed Deposit with the Travancore National & Quilon Bank, Ltd., Rs. 8,129-7-0.—At the time the Bank went into liquidation we had the above-mentioned sum in fixed deposit excluding interest accrued till then. I have since heard from the Official Liquidators that this sum now stands at Rs. 8,285-6-7, and the difference of Rs. 155-15-7 represents the interest. We have received a first dividend of 3 annas in the rupee amounting to

Rs. 616-0-2 which has been deposited in the current account with the National Bank of India. On the 1st May, a second dividend of 2 annas in the rupee amounting to Rs. 410-10-9 has been issued and this Dividend Warrant has been sent to the National Bank of India for realisation and credit. These two amounts totalling Rs. 1,026-10-11 should be invested.

S.I.P.B. Fund.—Subscriptions and contributions continue to be satisfactory. I appeal to members who are not subscribing to this Fund to come forward and do so, as liberally as possible, as many applications for assistance are being received.

General.—Doubtless, Gentlemen, other matters that have arisen during the year will be dealt with by the Chairman in his address, and in concluding, I should like to thank the Chairman for the help he has so generously given, also the Committee and other members for their assistance.

I now place my resignation before you, and am not offering myself for re-election.

Accounts.—Copies of the Audited Accounts having been circulated to members, were taken as read, and it was proposed from the Chair 'that they be adopted.' *Carried.*

Election of Auditors.—It was further proposed from the Chair 'that the same Auditors be re-elected at the same fees.' *Carried.*

Lorry Traffic—closure of certain roads.—It was proposed that a Sub-Committee consisting of Mr. Pryde, Mr. Koechlin and the Honorary Secretary go into the matter.

Calicut-Ootacamund Road.—The Chairman read correspondence in connection with this, and after some discussion the following resolution was proposed from the Chair:—

'This Association in General Meeting strongly supports the proposal of the Nilgiri-Wynaad Planters' Association that Government be urged that the Public Works Department take over the repairs and maintenance of those sections of the Calicut-Ootacamund Road not already under its care.'

Chairman's address.—The Chairman read his speech.

Subscription.—It was agreed that this should remain at the same rate as for the previous year, viz. 9 pies per acre.

Election of Office-bearers.—Mr. G. H. Waters was unanimously elected Chairman, and Mr. D. S. McIntyre Honorary Secretary.

The following were elected Committee Members for 1940-41.—Messrs. Koechlin, Benson, Pryde, Dean, Thompson, C. Vernede and J. Beaver.

Any other business.—There being no further business, with a vote of thanks to the Chairman and the Secretary, U.P.A.S.I., for the use of the room, the meeting terminated.

E. F. H. GERRARD,
Honorary Secretary.

C. VERNEDE,
Chairman.

O. W. MARDEN

Owen Westall Marden died at 'Gray's Flat', Coonoor, on 30th May, aged 76.

The late Mr. Marden was planting on the Nilgiris for a number of years. He owned Kinnacoorai Estate, Kilkundah, until 1936.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

The Season re-opened on 4th June, 1940, with a Sale for Consumption in India.

DESCRIPTION	Season 1940-41		Average on same date	
	Sale No. 1	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	...	...	...	...
For Internal Consumption:—				
Leaf Teas ...	4 8	4 8	4 6	4 8
Dusts ...	4 8	4 8	4 7	5 2
Green Teas ...	6 9	6 9	5 10	...

RUBBER.—London Rubber on June 17, 1940, 14¼*d*. (Buyers).

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on June 1 & 11, 1940
Brooklands ...	... 80
Deviview ...	... 84/86
Paunimade ...	... 68

Rubber

	Sale on June 6, 1940
Ribbed Smoked Sheet ...	55¾
Contract Crepe ...	53
Mottled Brown Latex Crepe	50 to 52½
Brown Scrap Crepe ...	52 to 53¾

The Madras Market

Current on 20th June 1940

Since our last report a fortnight ago, news from Europe has become increasingly serious. Its effect on the local share market has been almost the complete withdrawal of buying orders. Share values in most sections have shown further declines but at current prices there is now only a very limited selling pressure. Under such conditions the volume of business passing has been negligible. For the past week there has been practically no alteration in share prices and as we write the undertone is quietly steady at current levels. It is, however, obvious that the market will still be sensitive to further news from Europe. The Government security market has ruled very steady but the volume of business was small and most transactions are the result of protracted negotiations. Sterling loans in London on Tuesday the 18th June touched minimum prices fixed but since then they have gained anything up to £2%.

Rubber.—The price of Spot rubber in London at one time touch 14¼*d.* This is the highest recorded for many years. The closing price is, however, lower at 13¾*d.* The rupee price has not reflected this improvement and remains much the same at 38 cents per lb. rubber and 18 cents per lb. for the Quota. Business in local rubber shares was very nominal. Cochin Malabars were easier at Rs. 5-8 small business going through at down to Rs. 5-6. Rajagiris received limited support at Rs. 4 and Kalpettas at Rs. 14-12. There was also a limited demand for Tropical Plantations at Rs. 15 cum the dividend of 6¼%. Coorgs were quiet at Rs. 24-12 ex dividend. Latest cable prices from London for the sterling shares are as follows:—Rani-Travancores at 9/6*d.*, Kerala Calicuts 1/3*d.*, Malayalams 24*sh.*, Pullengodes 1/1½*d.*, and Poonmudis 1*sh.*

Teas.—Very little fresh support was in evidence in this section and prices were inclined to sag. Chembra Peaks, however, met with support at Rs. 3 while small deals in Nilgiri Neerugundis were put through at 12 as. Periakaramalais were lower at Rs. 16-4 while Peermades were offered in small parcels at Rs. 25. A line of Devasholas changed hands at Rs. 6 with likely buyers over. Kalasas were also in demand at Rs. 5-12 as.

FORTNIGHTLY RAINFALL STATEMENT

May 26, 1940 to June 8, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	1·01	4·51	18·16	23·68
3. Kallar B'dge	2·03	5·34	19·26	26·63
4. Koney ...	1·43	4·91	21·40	27·74
8. Twyford ...	1·68	7·73	22·32	31·73
9. Pettimudi ...	0·55	7·30	26·53	34·38
10. Kalaar ...	0·42	6·27	21·14	27·83
11. Chittavurrai...	0·20	1·42	20·22	21·84
12. BODI'KANUR...	...	...	8·67	8·67
13. COCHIN ...	0·41	8·42	14·65	23·48
14. Mooply ...	0·95	3·46	17·26	21·67
15. Pachaimallai	0·03	2·64	18·33	21·00
16. Mudis ...	0·06	3·42	20·73	24·21
17. POLLACHI ...	...	...	11·79	11·79
18. Ropeway Waterfall ...	...	0·63	14·33	14·96
21. Kerala Estate	1·76	2·39	24·08	28·23
22. Naduvattam	...	0·17	11·00	11·17
24. Coonoor ...	...	0·73	15·66	16·39

Stations	First week	Second week	Prev. from 1-4-'40	Total
25. Kotagiri ...	0·36	0·20	19·73	20·29
26. Ootacamund...	0·83	1·30	11·99	14·12
27. Yercaud ...	0.03	1·17	16·66	17·86
30. Devarshola T.E.S. ...	...	0·98	6·57	7·55
31. CALICUT ...	0·07	4·12	11·27	11·46
32. Kuttiyadi ...	0·14	...	8·62	8·76
33. Vayitri ...	...	2·79	10·30	13·09
34. Manantoddi...	...	0·55	8·37	8·92
35. Bilgiris ...	...	2·21	13·63	15·84
38. Pollibetta ...	0·90	0·63	7·70	9·23
39. Coovercolly ...	...	0·36	9·89	10·25
41. Kadamane ...	0·18	2·57	9·89	12·64
43. Merthisub'gey	N.R.	N.R.	8·18	...
45. Balehonnur ...	0·04	0·17	9·57	9·78
46. MANGALORE ...	0·07	4·04	3·42	7·53
47. MADRAS ...	0·01	0·23	5·78	6·02

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

There seems still to be some doubt amongst planters as regards the transfer of rights under the contract for the supply of tea to the Ministry of Food. The position is set out in the Ministry of Food Circular No. 14 of 24th April 1940, which reads as follows:—

'From various questions which have arisen with regard to teas and export rights under the Long-Term Contract, it appears that some classification is desirable as to the freedom attaching to these rights.

'The first consideration is that export rights must be reserved for the shipment of the Ministry's requirements.

'This means that every contractor must have his export rights pertaining to the contract earmarked by the Licensing Committee up to the full amount of the contract, and if these are not sufficient to cover any quantity tendered in excess of the 90% a guarantee to acquire the necessary rights to enable shipments to be made must accompany the offer of sale.

'Export rights for any quantity over the Government contract are free in the hands of the producer and may be sold without restriction, but it should be clearly understood that export rights pertaining to the contract cannot be sold unless to another contractor, and then only with the permission of the Tea Controller.

'Thus the Tea Controller may accept up to 100% of a garden's export crop, providing the seller has acquired, or as above guarantees to acquire the necessary export rights.

'In brief—gardens can transfer their export rights as they have done in the past, but if they wish to contract with Government must retain or acquire sufficient rights to cover shipment of their whole contract.

'Gardens cannot transfer their contract liabilities outside the company or agency except by permission of the Tea Controller, which will naturally be withheld unless the transferee has export rights available or the transferor also transfers the requisite export rights.'

The same circular refers to the substitution of grades, and to a slight alteration in the Ministry of Food Circular No. 6, as a result of which 'if a contractor replaces tea which he withdraws by tea of a lower value than the contract price, the contractor will be responsible for the difference. When replacement is made by teas of a higher value than the contract price, the excess would be credited against any deficit and any balance due to the Ministry must be adjusted by cash payment. In no case will the Ministry pay in excess of the contract price.'

LABOUR DEPARTMENT, U.P.A.S.I.

NOTICE

From July 1st 1940 the following changes will take place in the Palamcottah Division of the Labour Department:—

The Agent at Thenkasi will be Mr. Khajee Sheik Shahul Hamid Lebbai and at Alangulam Mr. V. Thirumalaiswamy Iyengar. These replace Messrs. M. S. A. Mohamed Mohideen Tharaganar and S. K. Subbiah Pillay.

The Puliangudi agency has been combined with Vasudevanallur and will be in charge of the Vasudevanallur Agent Mr. K. M. S. Yusuf Kula Mohideen Sahib.

The North Sankarankoil and South Sankarankoil agencies have been combined and will be in charge of the North Sankarankoil Agent Mr. L. M. Kondan Chettiar.

The Kottar agency has been combined with Nagercoil and will be in charge of the Nagercoil Chief Agent Mr. Isaac Moses.

A. H. MACKIE,
Director, Labour Department.

REPORT ON COFFEE STEM BORER WORK IN COORG

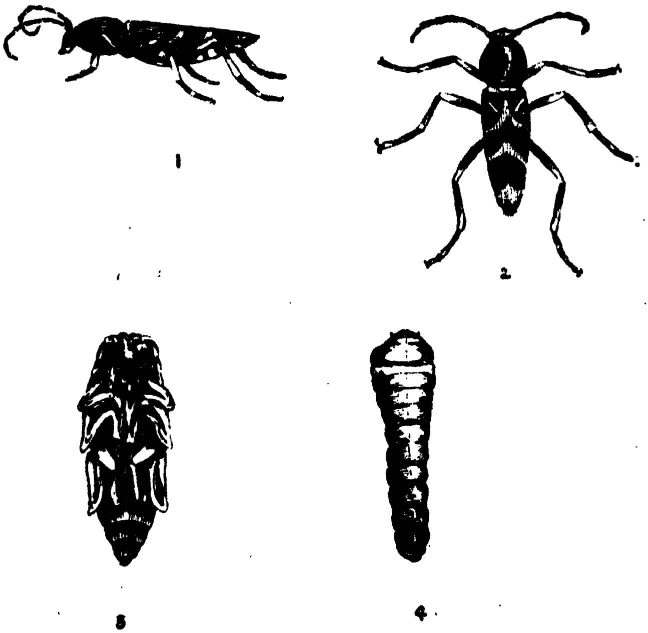
By V. K. Subramanyam, B.Sc., Assistant Coffee Scientific Officer

Note by the Coffee Scientific Officer.

This report represents an account of recent work done on Coffee Borer. In order to make it of greater interest, it has been augmented from earlier published work in order to present a picture of the pest and its relation to the coffee plant. The greater part of the earlier work done on this pest was communicated in Bulletin No. 11 of the Entomological Series of the Department of Agriculture, Mysore State, by T. V. Subramanyam and it is to him and to his predecessor, the late Dr. Kunhi Kannan, that most of our knowledge of this pest is due. It is not likely at this late date that anything strikingly new will appear concerning the habits of this insect under S. Indian conditions, but the recent work here reported does indicate some points at which further study may be profitable and it will help I think, to clear up some questions with regard to control measures.

W. W. M.

The Coffee Stem Borer (*Xylotrechus quadripes*) is a Cerambycid beetle whose larval stages bore into the wood of *Coffea arabica*. It has also been reported from *Coffea robusta* in S. India though the damage done is slight, and from several other trees in other countries. The damage done by this pest to *Coffea arabica* cultivation is extremely serious and satisfactory control has proved difficult.



1 & 2, Adults. 3, Pupa. 4, Larva.

The adult beetle is a rather elongated beetle, black in colour, though covered with a greyish pubescence, and with the wing covers strikingly marked with a series of whitish bands. The legs are long and powerful. In size, the beetles average about 12 mm. (½ inch) long by 4 mm. wide but there is considerable variation. In a series of beetles measured the largest was 19 mm. long and the smallest 9 mm. These are rather larger measurements than those given by Subramanyam in the Mysore Bulletin. A further point of variation lies in the colour of the femora ('thighs'); in some specimens these are completely black, others have the hind pair red and still others, the two hind pairs red.

The sexes are about equal in numbers in the observations made in S. Coorg.

The adult beetles emerge from the tree after the day has warmed up and on emerging they show great activity and are capable of mating the same day (Table I). The beetles take in water and will feed on a sugar solution. Beetles starved have not lived for more than 10 to 12 days, while those given water have lived for upwards of 30 days (Table II). The life of the males is shorter than that of the females.

TABLE I

Egg Laying Records, November 1940

Days after Beetles	1	2	3	4	5
Emergence ...	*		*	*	*
1.	—	*	*	—	*
2.	—	*	*	—	*
3.	—	57	*		*
4.	—	—	*		*
5.	—	—	73	25	*
6.	—	52	—	—	*
7.	*	—	—	—	*
8.	—	—	—	38	*
9.	—	22	2	2	—
10.	—	—	—	19	—
11.	—	—	—	—	—
12.	—	—	—	—	—
13.	—	34	43	2	—
14.	32	13	—	10	1
15.	18	12	2	—	—
16.	47	21	—	—	1
17.	2	5	—	—	18
18.	1	—	—	—	31
19.	—	—	—	—	—
20.	—	2	—	—	10
21.	—	D	—	D	—
22.	—		—		—
23.	—		—		—
24.	D		—		—
25.			—		—
26.			D		—
27.					—
28.					D
Total Eggs ...	100	218	120	96	61
Life ...	24 days	21 days	26 days	21 days	28 days

*Indicates days when males were present and active.

The female possesses a long and very flexible ovipositor. When she wants to lay eggs, she moves over the tree stem inserting her exerted ovipositor here and there in the search for a suitable spot in which to deposit eggs. Eggs may be laid singly or in chains depending on the suitability of the site. The length of the ovipositor is such that an egg can be deposited in a crevice as deep as ½ inch. Cases have been observed of the long ovipositor becoming wedged in bark crevices, imprisoning the [illegible]

In captivity, the period of egg laying is from 10 to 15 days. The maximum number of eggs laid by an individual in the course of this study was 218 eggs laid in 13 days, and as many as 60 eggs were laid in a single day (Table I).

The average size of the eggs when laid is 1¼ mm. × ½ mm. (i.e. about 1/20th of an inch long). They are soft and white and look like minute rice grains. They are glued to the surface of the wood and do not fall off. They hatch in 10 to 15 days, depending on weather conditions. It has been found that eggs take longer to hatch when placed in a moist chamber, and that eggs in contact with water fail to hatch.

TABLE II

Length of Life of Beetles in Captivity

Beetle	Emerged	Died	Life	Sex	Remarks
1.	9.12	17.12	8d.	M.	Starved.
2.	13.12	26.12	13d.	M.	Do.
3.	10.12	17.12	7d.	F.	Do.
4.	11.12	22.12	11d.	M.	Do.
6.	15.12	5.1	20d.	F.	Given water, laid 85 eggs and 80 more eggs in the body.
7.	18.12	17.1	30d.	F.	Given water.
8.	29.12	15.1	21d.	M.	Do.
9.	24.11	4.12	10d.	F.	Starved.
10.	22.11	30.11	8d.	M.	Do.
11.	22.11	lost	—	F.	Do.
15.	24.11	4.12	10d.	F.	Do.

M = Male. F = Female.

On hatching out, the larva begins to eat its way into the bark straight from the egg shell, though there may be a pause of 4 to 8 hours before the grub begins to feed. When the eggs are laid very superficially, the adherent egg shell provides a purchase for the initial attack on the bark. Sometimes, where crevices favour it, the young grub remains for some time between the bark scales, but a direct attack on the living bark, soon after hatching, is quite usual. After 2 to 4 days, depending on the bark thickness, the grub reaches the wood. Progress within the wood is slow and the grub works at about the same depth for some time. This depth is about the thickness of a stout sheet of paper below the surface of the wood. The bore of the tunnel at this stage is about ¾ mm. and the progress within the wood amounts to 5 to 7.5 mm. during the first week (0.2 to 0.3 inches). The tunnel can be seen as a fine dark streak by peeling off the bark.

The young grub is about 1½ × ½ mm. at this stage. The head end is broad and possesses strong mandibles. The tunnel is cut by moving the head from side to side with a circular sweep. The tunnel is broad enough at the point where the grub works to allow it to turn round. Frequently, the grub has been observed resting with its head towards the point of entrance.

According to T. V. Subramanyam, the grub works in the stem for about 9 months. In this time, it will have grown to its full size. At this stage it is pale yellow in colour, up to 1 inch in length and very broad at the head end. It moves towards the surface of the stem to make an exit tunnel. It cuts a circular disc on the inner surface of the bark and finally retreats inwards into the gallery and pupates in a chamber excavated a short distance from the surface of the stem, with its head pointing outwards. The pupa is whitish and shows the wing buds, antennae and mouth parts of the adult beetle quite clearly. Its average size is

$\frac{5}{8}$ inches × .22 inches broad. This stage lasts from three weeks to a month.

The transformation of the pupa into the adult having been completed, the still tender adult beetle rests for a day or two. It then makes its way toward the exit hole already marked out by the grub stage and cuts out the circular disc to the open. The adult exhibits no great hurry to take flight. Beetles can be observed in the field, with their heads flush with stem surface, in the exit tunnels, into which they retreat if disturbed. The beetle finally emerges after about a week, selecting a warm sunny morning for its first flight. It moves up the stem to the crown of the tree and after a few preliminary groomings, takes flight with a sharp buzz.

The main emergence in South Coorg commences from about the middle of September and continues to nearly the end of December. The emergences are not distributed evenly over this long period. In Table III the number of beetles emerging from uprooted stems kept in the laboratory at Sidapur is given for each week, in the 1939 period.

TABLE III

Distribution of emergence at Sidapur in 1939

	1st Week	2nd Week	3rd Week	4th Week
September ...	—	—	1	4
October ...	9	9	23	85
November ...	85	83	26	87
December ...	24	10	3	1

It can be seen that the maximum period runs from the last week in October up to the last week of November.

Another emergence period occurs about the middle of April but this is on a smaller scale than the November flight. Its exact importance has not been cleared up. T. V. Subramanyam records it as of small importance and states that it is not certain whether this flight arises from eggs laid in the preceding April or from the delayed emergence of adults from eggs laid 18 months previously.

Work on this question is proceeding but no definite statement can yet be made. The observation that at this period, the emergences appear to be much more frequent from young plants than older ones suggests the possibility that in such plants, the life cycle may be a shortened one and that these emergences arise from eggs laid in the preceding November. Wide variations in the time taken to complete the life cycle in response to food and other environmental conditions are well known in the group of beetles to which coffee borer belongs.

In an attempt to study the question, a large number of trees were cut open in the monsoon and the grub sizes measured. Although there was a wide variation in grub size at this time, and there was a suggestion that more than one brood might be involved, the results when compared with the range of size of adults emerging in November were too uncertain to carry much conviction.

Coffee trees of all ages are susceptible to attack, excepting the very youngest plants (less than 2 years old). It is obvious that the younger the tree, the sooner it shows up and dies. Older trees survive an attack at times. In young trees, the grub frequently bores down into the tap root.

In the early stages of attack, it is often not possible to see signs of injury especially in older trees. One of the best known signs of attack is the borer ring or ridge round the stem. These rings or ridges are only later signs and young trees frequently do not show them at all. In some estates, it is the practice to incise these rings and if the frass within is brown, the trees are left as 'old borer' while if the frass is white, the tree is removed, as being freshly bored. Anything which results in increased efficiency in the removal and destruction of bored trees is to be recommended. While a tree with rings is or has been bored, the absence of new frass or even of rings does not mean that the tree is free of borer.

On the whole, trees which have been bored, even if they appear to recover, must as a rule be regarded as having lost efficiency as productive units in the estate.

Bored trees can be made out easily about the beginning of May. Even earlier, shortly after the first showers, they can usually be identified by a look of lassitude and by the absence of new growth. In some cases, the excessive production of stem suckers also points to borer attack. Later the whole tree turns yellow, leaves fall and any crop present is likely to be jelloo.

Control measures of various kinds have been suggested during the past 40 years, but with indifferent success. A number of washes applied to the stem proved of little or no value. Other methods were either too expensive or impracticable on any extensive scale.

During the course of recent work a number of stem washes have been given trials both in the field and the laboratory. Most of these were imported tar oil derivatives but one of them, an emulsion of cashew shell oil, is an indigenous product. All these materials were found to be good ovicides, provided they came into direct contact with the eggs. One of these materials, Mortegg, which was introduced a few years ago, has come into fairly general use on estates in Coorg.

It has been found that none of the materials so far tried are repellent to the beetles, at any strength used. Presented with treated and untreated stems, the beetle selects the stem with the most suitable surface for egg laying, irrespective of the treatment. Eggs laid on stems after treatment with the stem wash hatch normally.

The effectiveness of such stem washes is therefore limited by the fact that the ovicidal effect is purely a direct contact action, the active egg laying period is lengthy and the beetles are indifferent to the treatment and merely select the surface for egg laying on the basis of its suitability.

The very good results obtained with the first applications of stem washes were probably in a large degree attributable to the very thorough cleaning and rubbing that the stems received. In all the experimental work with egg laying beetles, it has been found consistently that eggs are not laid on smooth surfaces and the beetle goes to considerable trouble in searching for suitable sites.

Some of the later failures with stem washes may be due to the absence of the stem rubbing or to purely superficial cleaning down of stems. At the same time, the timing of the application of a wash which can only act by direct contact is obviously of the first importance in securing satisfactory results.

Field trials were laid out in 1938 to study the two points—the importance of rubbing in relation to the performance of Mortegg and the timing of applications. The summarized results of these trials are given in the following tables.

TABLE IV

The Application of Mortegg with or without Rubbing for the Control of Borer

Expt.	Mortegg + Rubbing	% Borer removed Mortegg alone	Rubbing alone	Control
1.	1·7%	1·5%	1·3%	3·6%
2.	4·8%	2·9%	8·8%	4·4%
3	3·3%	6·2%	6·7%	14·2%
4.	1·8%	1·9%	3·3%	4·8%
5.	3·2%	2·8%	3·1%	3·8%

These results are not very clear and unfortunately the nature of the experimental lay out does not permit of the results being studied statistically. It must be admitted that the conduct of field trials with a pest like stem borer, which is so irregular in its incidence over an area and in which the number of trees infested is in actual numbers so low, presents very great difficulties. These figures suggest that the Mortegg has given about equal results whether applied with or without rubbing, and that rubbing alone has given rather poorer results, though it shows an improvement of no treatment at all.

In view of the uncertainty that must be attached to these experiments, too much cannot be made of them. In support of rubbing numerous results have been obtained in egg laying experiments, some of which have been reported previously (*Planters' Chronicle*, XXXIV, 1938, pp. 162-3), in which the number of eggs laid on well rubbed stems was considerably below that laid on untreated stems or stems treated only with a stem wash some days prior to egg laying.

TABLE V

Timing of Mortegg Applications

Expt.		% Removed				Control.
	Date ...	21-10-38	1-11-38	18-11-38	12-12-38	
1.		13·9%	10·6%	7·8%	11·4%	16·6%
	Date ...	19-10-38	1-11-38	17-11-38	17-12-38	
2.		6·0%	4·0%	3·3%	1·7%	6·6%
	Date ...		31-10-38	16-11-38	16-12-38	
3.			2·3%	2·6%	2·8%	3·4%
	Date ...	31-10-38	14-11-38	28-11-38	12-12-38	
4.		3·2%	1·9%	1·1%	5·9%	9·0%
	Date ...	31-10-38	18-11-38	2-12-38	15-12-38	
5.		3·0%	1·2%	2·1%	3·0%	2·9%

These experiments are open to the same criticism as those on the method of application and its relation to rubbing. On the whole they suggest that applications before November are inadvisable. This is in agreement with the evidence of the borer emergences although this evidence applies to 1939, whereas the applications of Mortegg were made in 1938. Further experiments on this question are in progress.

At present, it must be admitted that the results of Mortegg or other stem wash application and of rubbing are uncertain and frequently the gains must be considered doubtful. At the same time the experiments and observations so far carried out do afford sufficient encouragement to continue the study of these methods.

As far as information goes at present, the following scheme of treatment would be worth trial in severely affected patches. A thorough rubbing of the stems is carried out in the latter part of the S.-W. Monsoon or sometime before the end of September. From the end of October until the middle of December, the trees are rubbed over every 15 days. One or more of these rubbings could be associated with a stem wash application.

This scheme is based on the facts that:—

1. Eggs are not laid at all freely on well rubbed stems.
2. Data so far collected suggest that considerable emergences do not occur much before the third week of October.
3. After emergence, the beetles are on the wing for 3-5 days, during which mating occurs.
4. Eggs take 10 to 15 days to hatch.
5. The young larva is within reach of rubbing for 1 to 3 days and sometimes longer.

The scheme is, of course, too laborious and expensive for the treatment of more than limited areas, but can be reduced with due regard to the facts noted. Further it is certain that the time of the main emergences will fluctuate from year to year.

It is suggested that planters might with profit instal a suitable wire cage at some convenient point and place in it a number of infested coffee stems collected during the borer removal rounds. The cage would be inspected at regular intervals from early September and the numbers of beetles present in the case noted. When the numbers showed a marked rise, treatment of the coffee by rubbing with or without a stem wash application could follow three or four days later. The desirability of further treatments could be decided on the distribution of emergencies in the cage. It is unnecessary to indicate that the cage should be insect tight and that the adults should be destroyed when they are counted. In order to distinguish the peak periods with any success, the number of stems or stem sections should be considerable. A trial of this method on a field scale is planned for the coming season.

Finally, the importance of the management of shade and the efficient removal of bored trees cannot be over emphasized. In many areas in S. Coorg where borer is severe, the shade is rather thin. It has also been observed that the shade is sometimes opened out just before or during the flight season. The question of the exact degree of shade required for a given piece of coffee is often difficult to judge, but it seems that frequently shade is altered with little reference to other conditions. In borer areas, the borer should be the first consideration in relation to shade and its regulation. It is better to err on the side of too much shade than too little. Shade must, of course, be regulated, but the regulation should be so timed as to ensure a good shade during the flight seasons. The drawbacks, whatever they may be, will be amply compensated for by the check to borer.

The permanent upper shade canopy is not as important as the lower canopy. Dadaps should be kept low, especially along borders, or they may be alternated low and rather higher topped trees. In open patches and new clearings, the additional cultivation of belts of a shrubby green manure such as Crotalaria between the rows is desirable and useful.

Where open patches occur in thick coffee, owing to the removal of a number of plants from any reason, or where supplies have failed for some time, a good low shade is essential and it is desirable to give the surrounding trees special attention with respect to rubbing or stem washing.

In conclusion, the habits of the egg laying females and of the young grubs suggested the possibility of using a stomach poison as a wash either alone or along with an ovicide. Initial trials have, however, given no result. The possibility of applying a fine powder of some sort in a suspension to close up the bark crevices seems worth further trial and work on this method is planned for the coming season.

DISTRICT NOTES

KANAN DEVAN

The Fifty-fifth Annual General Meeting of the Kanan Devan Planters' Association was held at the High Range Club, Munnar, on Wednesday, 29th May 1940, at 3 p.m. The following are extracts from the proceedings.

Chairman's Address.

Gentlemen, In moving the adoption of the Directors' Report, I would, as is customary, take the opportunity to review certain of the events of major importance to the Association during the past season.

The outbreak of hostilities between Great Britain and Germany is, of course, the most important of those events. The immediate effect, so far as our community is concerned, was the departure on military service of a large number of our younger men, and the knowledge that we may lose more in the near future, as a result of which many of our estates will continue understaffed.

It goes without saying that there are many others who, as soon as war was declared, and particularly so in view of the gravity of the news now being received, would have welcomed an opportunity to take a more active part in the Allies' endeavour to prevent the overthrow of small and peace-loving nations by one which has clearly indicated that it holds nothing sacred and will descend to any act which will further its ideas of aggrandisement.

The requirements, however, of this great country in which we live are realised by all, and we can but extend to those who have left, or are leaving, the heartfelt wish that they may be spared to return, and to take once more their normal happy life among us.

The present is, perhaps, a suitable moment at which to refer to the U.P.A.S.I. War Fund, concerning which all members will have received a copy of the President's appeal. The scope of this appeal is extremely wide, and it is permissible to specifically earmark donations or subscriptions for any particular purpose considered desirable.

A reference was made in the Minutes of a recent meeting of our Committee, and I am happy to have this further opportunity of drawing the attention of members to the Fund.

It is usual to make reference to prices obtained for our products during the season under discussion, but such a reference on this occasion can be of little advantage.

The unprecedented drought, and the irregular sailings of ships from India, created difficulties in arranging for despatch of teas exportable under quota allotted in respect of the season just ended, such difficulties being, I understand, greater in other districts. The arrangement, however, by which all teas despatched under Special Export License shall be deemed to have complied with the Control Act, provided they had been delivered to the Customs Authorities by midnight on the 31st May, has relieved the situation.

The short- and long-term contracts with the Food Controller in respect of tea are known to all of you. While admitting that the details of such contracts necessitated considerable discussion and much careful thought, one remains surprised that one-third of the period covered by the latter contract had elapsed before the Controller decided that the proportion of the teas to be delivered to him must be equivalent to 90% of the export.

quota allotted to contracting estates. Such delay may conceivably present no small difficulty to Companies or Estates which have, in the interim, supplied upwards of 14% of their available export teas to outmarkets.

As you are aware, the prices to be paid by the Food Controller are based, with minor exceptions, on the three basic years of 1936, 1937 and 1938, and in view of the fact that an extra penny per pound above such price has been agreed upon in order to meet the increased cost of necessary commodities, I suggest that the Industry has reason to be satisfied that some measure of profit is assured.

As a member of the Committee of the U.P.A.S.I. Tea Product Section, I have had access to considerable correspondence in connection with the extra allowance I have referred to. That Committee is not necessarily satisfied that one penny per pound will be sufficient to cover the increased expenditure, but, in view of advices received from the South Indian Association, had no hesitation in falling into line with the acceptance of that extra amount made by North India.

The Tea Product Section has now taken steps for the formation of a Costing-Sub-Committee, comprised of representatives of the larger firms interested in tea in South India. The Sub-Committee will obtain figures relating to expenditure for the purpose of ascertaining whether the allowance now granted can be considered adequate; should that not be the case, the Industry can but take comfort in the fact that it is thus making its own additional war effort.

The deliberations of the Sub-Committee will no doubt have a considerable bearing on the prices to be paid, should a further contract unfortunately be necessary.

Members will have noticed that the Central Government, in accordance with Section 13 of the Indian Tea Control Act, and after consultation with the Indian Tea Licensing Committee, have announced that the export allotment for the new Quota Year will remain at 95% of the standard export figure.

Signatories to the Indian Tea Association's scheme for internal regulation of markets have also been advised that the release for 1940-41 will be 15% of the best crop basis. It has been suggested that this figure should have been reduced in view of the prices ruling, but Mr. Milner, who attended a recent meeting of the Indian Tea Market Expansion Board in Calcutta, received information which showed the desirability of maintaining the percentage at the same figure as during the past year.

It is to be regretted that the industry cannot be united in respect of this scheme, for it is never possible to calculate with any certainty the quantity of tea which will be made available for consumption in India, and the existence of non-signatories may well have a detrimental effect upon prices.

The Rules under the Travancore Factories Regulation, No. VIII of 1114, were issued with the Government Gazette of the 30th January last. Certain members of the Association subsequently had an opportunity of discussion of these Rules with Mr. Varadaraja Sarma, at that time Chief Inspector of Factories, and we are indebted to that gentleman for such guidance and assistance. I am personally indebted also to Dr. Harler and Messrs. Tolson, Ranicar, Gray and Soutar for the ready help which those gentlemen have rendered.

The Government Press has, as yet, been unable to supply copies of the Rules sufficient for issue to all Factory Managers, but considerable progress has been made, and I have little doubt that, when the first inspection of our Factories is made, the authorities will appreciate that we are anxious to comply with the requirements of the Act to the utmost.

Last year I referred to the inauguration of the Travancore State Transport Scheme, and it is pleasing to be able to record that this has proved the success that was anticipated.

On this occasion it is fitting to record the opening of the Power House of the Pullivasal Hydro-Electric Project by the Dewan of Travancore, Sir C. P. Ramaswami Iyer, on the 19th March last. This important ceremony was attended by the Resident, Lt.-Col. G. P. Murphy, Sir Henry Howard, all the senior officers of the State, many members of the Legislature, representatives of many European business firms and a large number of residents of this district.

I would couple this Association with the congratulations offered by Sir Henry Howard to the Government and to Mr. Menon on the results achieved in the face of many disappointments and unexpected delays.

Turning to politics the Chairman extended to Mr. Tolson the sincere appreciation of the Association for his excellent work in, and out of, the Sri Mulam Assembly.

A reference was then made to the possible advantages to be obtained by the introduction of Welfare Committees on estates, with a request that members would bear in mind the possibilities of legislation.

Mr. Sampson spoke of the manner in which the district had been honoured by the appointment of Mr. E. H. Francis to the position of President of the United Planters' Association of Southern India, and took the opportunity of conveying to that gentleman the congratulations of all members.

In conclusion the Chairman expressed his sincere appreciation of the generous assistance so readily given by members of the Committee, and in particular, of the able manner in which Messrs. Ranicar and McIntyre had shared the duties of Honorary Secretary during the past year.

Address by Mr. J. W. Tolson, Planting Representative on the Sri Mulam Assembly

During the year under review your representatives have been Messrs. E. Hall, T. W. U. Park and myself. Mr. Hall resigned on leaving for home furlough and I would like to take this opportunity of saying how very much I have appreciated being associated with him and how the thanks of the industry are due to him for the work that he has put in.

Today I wish to draw your attention to what has been happening in the State industrially, and especially with regard to future legislation. As you all know, we now have four labour Acts: The Trade Union Act, The Trade Disputes Act, The Workmen's Compensation Act and The Factory Act. The Government have published in the Gazette the Payment of Wages Bill; this Bill will be introduced at the next Session and I do not think that it will be long before it will be enforced in our factories.

I would also point out to you that the Provincial Labour Ministers have been in conference in Delhi and it is proposed to circulate four Bills: Holidays with pay, Industrial Disputes, and an Amendment to the Payment of Wages Bill together with another Bill for the collection of industrial statistics.

You may say that all this legislation is not intended to refer to planting but in view of what is and has been taking place in Travancore, can we afford to say this?

During the last few months the Conciliation Board on the mats and matting industry has sat and reported to the Government.

It appears that over a period of years the mats and matting industry has gone from bad to worse, labour troubles have persisted and finally both Capital and Labour asked for Government intervention.

The Government acted by appointing the District Magistrate to conduct an enquiry and after this preliminary enquiry and the coming into force of the Trade Disputes Act, the Government appointed a Conciliation Board consisting of Messrs. K. George, Land Revenue and Income-Tax Commissioner, N. G. Haydon, Travancore Chamber of Commerce, Sankara Mannan, Alleppey Chamber of Commerce, V. K. Achuthan and P. N. Krishna Pillai, Labour Leaders. The Conciliation Board went very thoroughly into the questions not only affecting labour but the industry as a whole. Their report is one that may have far-reaching effect on other industries in the State. There are certain aspects of this report, which I consider we should watch and make every endeavour to guard against in our own industry.

The most important recommendations are the control of labour and the licensing of labour. It appears that labour is so plentiful that there has been a cutting of wages due to competition and the impossibility of finding 26 days' work in a month.

Further recommendations are the reduction of a Moopen's remuneration and the overhauling of the contract system.

The Board appeals to the Government to introduce without delay the following Acts: Minimum Wages, Payment of Wages, Standardisation of Wage Rates and Maternity Bill.

The Board also draws the attention of Government to the strict enforcement of the Factory Act especially with regard to ventilation, latrines, drinking water and the prevention of Sunday work.

They further recommend that the Unions should help with child welfare, the opening of more schools and the establishment of libraries.

The Board considers that, for the establishment of good relations between capital and labour, a Labour Commissioner is necessary, who will also act as Conciliation Officer, with a Chief Inspector of Factories, and that for the present Travancore shall be divided into three districts: Trivandrum, Alleppey and Kottayam, with an Inspector in charge of each division.

From what I have said you will realise that labour matters have the attention of the Government and we hope that a tactful understanding of all problems will be obtained, but I feel that this can only result from knowledge and training and I trust that the Government will go to the expense of sending their Inspectors for training and experience in the working of the Labour Acts in British India.

On our part I feel that we must exercise patience and tact realising that experience of working conditions in factories is at present little understood, but that, given time and understanding, our primary difficulties will pass.

Committee's Report

The following report was read:—

The Committee have the honour to submit to members this report on the proceedings of the Association for the year 1939-40 together with a statement of accounts for the same period.

Chairman and Committee Members.—The Chairman, Mr. J. E. Sampson, was elected at the last Annual General Meeting held on 31st May 1939. Mr. E. E. Ranicar was elected the Association's Honorary Secretary from the 1st of April to the 31st August 1939, and Mr. D. M. McIntyre was elected Honorary Secretary as from the 1st of September 1939, at the last general meeting held on 31st May 1939.

The members of the Committee nominated by their respective firms were as follows:—

Kanan Devan Hills Produce Co., Ltd.—Messrs. J. E. Sampson, E. E. Ranicar, R. B. Cullen, D. M. McIntyre and Dr. C. R. Harler.

Anglo-American Direct Tea Trading Co., Ltd.—Messrs. R. Brown and J. W. Tolson.

Malayalam Plantations Ltd.—Messrs. J. Gray and C. K. Olney.

Talliar Estates Ltd.—Mr. J. H. Wilkes.

On the 9th January 1940 Mr. D. M. McIntyre resigned his position on the Board, and The Kanan Devan Hills Produce Co., Ltd. nominated Mr. E. H. Francis to the existing vacancy. There were no other changes throughout the year.

Planters' Benevolent Fund.—Your Committee regrets to record a slight reduction in the support given to this deserving Fund, but this is no doubt largely due to the fact that several of our younger members have been called up for Military Service. The total amount contributed and remitted to U.P.A.S.I. was Rs. 760 of which Rs. 100 was donated by your Association.

Government Medical Grant.—Your Committee records its appreciation once again for the support given by His Highness' Government to the three Grant-in-aid hospitals. The grant of Rs. 100 per mensem in respect of each hospital has been regularly paid.

Lady Ampthill Nursing Home.—Your Committee has continued to support this institution and made the revised yearly payment of Rs. 500 out of the Association's funds.

South Travancore Medical Mission, Neyyoor.—Your Committee has again supported this institution and made the yearly payment of Rs. 456 out of the Association's funds.

Travancore Combined Planters' Association.—Your Committee has to report that the Travancore Combined Planters' Association was wound up on 31st October and the cash balance of Re. 1-12-8 was transferred to the newly formed Association of Planters of Travancore.

Association of Planters of Travancore.—Your Committee has much pleasure in reporting that this Association became an Association Member of the Association of Planters of Travancore. Your Committee has much pleasure in recording that Mr. J. W. Tolson was elected as the Chairman of the new Association, and the first meeting was held at Kottayam on 31st October 1939.

Political.—Our Political Representatives to the Sri Chitra State Council were Messrs. Eric Hall and T. W. U. Park, and our thanks are due to both these gentlemen for their services. Mr. Eric Hall resigned his seat on the Council during August 1939, and it is our wish to record our appreciation of the excellent work and the valuable services he has rendered to the planting community during his term of office. Mr. T. W. U. Park was nominated by South Travancore Planters' Association to fill the vacancy, and all Planting Associations in Travancore supported this nomination. Mr. T. W. U. Park was accordingly declared elected unopposed.

Our representative on the Sri Mulam Assembly was Mr. J. W. Tolson and our thanks are due to this gentleman for his valuable services during the year.

We record the following Bills introduced and passed by the Travancore Government.

1. Travancore Provident Insurance Societies Bill.
2. Travancore Contract Bill.
3. Travancore Sale of Goods Bill.
4. Travancore Specific Relief Bill.
5. Travancore Partnership Bill.
6. Travancore Arbitration Bill.
7. Travancore Telephone Bill.
8. Travancore Credit Bank Act Amendment Bill.
9. Travancore Negotiable Instruments Act Amendment Bill.
10. Travancore Revenue Summons Act Amendment Bill.
11. Travancore Civil Procedure Code Amendment Bill.
12. Travancore Workmen's Compensation Bill.
13. Travancore Markets Regulation Amendment Bill.
14. Travancore Village Panchayats Courts Regulation Amendment Bill.
15. Travancore Rubber Control Bill.
16. Travancore Bankers' Books Evidence Bill.
17. Travancore Reformatory Schools Act Amendment Bill.
18. Travancore Census Bill.

The planting community were represented on the Select Committees of the Rubber Control, and the Bankers' Books Evidence Bills.

Your Association would like to express their thanks to Mr. P. Kurian John, the Rubber Controller, for all the time and trouble he took to obtain the necessary amendments to the Rubber Control Bills.

Your Association would like to call the attention of all members to the Factory Act, and the Workmen's Compensation Act, which are now in force.

Control of Tea Export in National Emergency.—On the outbreak of war the Food Controller brought into operation his Short-Term Contract which was followed by his Long-Term Contract. A reference to both these contracts appears in the Minutes of the meeting of the Committee held on 19th February 1940, copies of which have been issued to all members.

General Business.—During the year under review your Association has been represented at all meetings of importance, and copies of delegates' reports have been circulated to all members. Your Committee would like to take this opportunity of thanking the following gentlemen, for the excellent manner in which they looked after your interests at the various meetings.

Mr. H. C. Boyd, Mr. E. E. Ranicar and Dr. C. R. Harler.

Your Chairman, Mr. J. F. Sampson, has served on the Tea Product Section throughout the year, and your interests in this respect have been well looked after.

Your Committee desires to congratulate Mr. E. H. Francis and to record the great honour which has been bestowed on him by his appointment as President of U.P.A.S.I.

Your Committee desires to thank the Manager of Munnar Estate for the excellent manner in which he has looked after the War Memorial in Munnar during the past year.

Membership.—The membership now comprises four members representing 33,386.50 acres of tea, 785 acres of coffee and minor products nil.

There are also 66 Personal Members on our Register after recording 21 resignations and 3 new members.

Your Committee has to record that out of the 21 resignations, 13 of these were due to members having volunteered and been accepted for Military Service.

The following gentlemen have already left this district to serve in 'His Majesty's Forces':—Messrs. J. B. Soutar, R. R. Tewson, A. R. C. Perceval, C. G. Sowerby, H. R. Clarke, E. J. C. Menzies, R. M. Howie, N. S. Cole, D. J. Milne, L. A. H. Mure, W. C. Roy, P. S. G. Leckie and F. Price.

Crops.—The crops for the season under review and in 1938-39 were as follows:—

	1939-40	1938-39
Tea ...	17,252,815 lbs.	16,919,825 lbs.
Coffee ...	23 tons	82¼ tons
The International Release	...	... 95%
The Export Quota Rights	...	... 65.24%
The Internal Quota Rights	...	... 15%

The audited accounts of the Association have been in your hands for the usual time.

1. The subscribing acreage yielded a total income of Rs. 2,670-4-5 for the year of report.

2. The Revenue Account for the year shows a deficit of Rs. 124-6-3 which has been set off against the surplus balance of the previous year.

3. The rate of cess for the year was one anna and three pies per acre as against one anna and six pies for the preceding year.

4. The Committee recommends a cess of anna one and pies three per acre for the year 1940-41, and any deficit be met out of the balance brought forward from last year.

5. The Committee also recommends that no subscription be collected from Personal Members during 1940-41.

6. The Auditor, Mr. N. Ganapathy of Messrs. Kuppusamy & Ganapathy, Registered Accountants, Madras and Trivandrum, retires at this meeting and being eligible, offers himself for re-election.

In concluding this report, Mr. J. E. Sampson and Mr. D. M. McIntyre, your Chairman and Honorary Secretary respectively, beg to tender their resignations in accordance with Articles of Association, Rule 11 A.

Election of Office-Bearers.

Mr. J. E. Sampson and Mr. D. M. McIntyre were elected Chairman and Honorary Secretary respectively, and the following were nominated by their respective Companies to the Executive Committee:—

Kanan Devan Hills Produce Co., Ltd.—Messrs. E. H. Francis, J. E. Sampson, A. G. MacGregor, R. B. Cullen and H. C. Boyd.

Anglo-American Direct Tea Trading Co., Ltd.—Messrs. R. Brown and J. W. Tolson.

Malayalam Plantations Ltd.—Messrs. J. Gray and C. K. Olney.

Talliar Estates Ltd.—Mr. J. H. Wilkes.

INDIAN RUBBER LICENSING COMMITTEE

ANNOUNCEMENT

All rubber producers are hereby informed that including the 60% provisional allotment the total exportable maximum has been fixed by the Indian Rubber Licensing Committee at 80% of each estate's basic crop for the year 1940, subject to alterations if any by the International Rubber Regulation Committee. The additional quota thus made available to producers may be used from the 24th June 1940 for the purpose of obtaining export licenses; but dealings in quota by way of transfers will be accepted for registration only from the 15th July 1940 as the staff of the Committee is now fully occupied with the preparation and despatch of allotment letters to over 14,000 units.

Producers are also invited to read carefully the conditions of allotment printed on their allotment letters.

(By Order)

Rubber Control Office,
Malankara Buildings,
Kottayam, Travancore.
18th June 1940.

P. Kurian John,
Rubber Controller for India.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 24th June were:—

Rubber, including export licenses	...	55.50 cents a lb.
Rubber Export Quota ...	...	15.25 cents a lb.
1st quality rubber alone ...	...	40.00 cents a lb.

TEA QUOTA PRICES

The Quota prices ruling in South India on 3rd July were:—

Tea Export Rights	...	4 annas per lb. (Nominal)
Internal Market Rights	...	1 pie per lb. (Nominal)

AVERAGE PRICES OF COMMON TEAS—MAY 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly ...	0	7	6	0	8	2
Tanjore ...	0	8	9	0	9	6
Kumbakonam ...	0	8	5	0	9	5
Mayavaram ...	0	8	9	0	9	8
Tiruvarur ...	0	8	6	0	9	2
Pudukottah ...	0	8	0	0	8	6
Karur ...	0	8	5	0	9	8
Erode ...	0	8	2	0	8	9
Tiruchengodu ...	0	8	3	0	8	9
Namakkal ...	0	8	8	0	8	9
Salem ...	0	8	1	0	8	9
Dharmapuri ...	0	8	2	0	8	7

TEA-GROWING IN NEW GUINEA

The Director of Agriculture in New Guinea, Mr. G. H. Murray, M.L.C., who is in Sydney on furlough, said yesterday that he was convinced of the commercial possibilities of tea-growing in New Guinea.

The Federal Government has decided to investigate the practicability of producing a large part of Australia's tea requirements in New Guinea.

Mr. Murray has established an experimental tea plantation in Central New Guinea, and, in a report to the Administrator, he has strongly advocated the development of the industry on a commercial scale in the highlands of that territory.

'I am quite certain,' he said, 'that the Administrator will welcome capital and facilities for the development of this industry, and of other industries in the highlands of New Guinea, with their wonderful climate and their vast possibilities for tropical mountain crops. It has also to be remembered that high country tea is much more valuable than that grown in low country.'

—*Sydney Morning Herald*, 30th March 1940.

K. W. GRAHAM

Flight Lieut. K. W. Graham died in the R.A.F. activities in the present war.

The late Flight Lieut. Graham was born on Ladrum Estate (then owned by his father) in 1904. He was a very prominent young planter when he was an assistant on Ladrum and Glenmary Estates in the S.I.T.E. Company for five years from 1926, after which he took up work at home.

D. MEPPEN

Douglas Meppen died at the Anderson Memorial Ward, Chikmagalur, on 18th June—aged 97.

The late Mr. D. Meppen was a prominent coffee planter of Mysore and was planting for over 50 years in Kadur District. He was a long-standing member of the Mysore P.A., the Indian P.A., and other planting bodies.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sale No. 2 was held on 17th and 18th June, 1940.

DESCRIPTION		Season 1940-41		Average on same date	
		Sale No. 2	Average to date	In 1939	In 1938
		As. p.	As. p.	As. p.	As. p.
With Export Rights	...	10 2	10 2	10 11	10 3
For Internal Consumption:—					
Leaf Teas	...	4 0	4 4	4 5	4 2
Dusts	...	4 10	4 9	4 6	4 7
Green Teas	...	5 10	6 5	5 5	...

RUBBER.—London Rubber on July 1, 1940, 13*d.* (Buyers).

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

SOUTH INDIAN TEA

			Sales on June 18 & 25, 1940
Burnside	...	...	58
Connemara		...	46
Dunsandle	...	...	78
Mount Stuart	...	...	60
Neelgiri	...	...	48

RUBBER

		Sale on June 20, 1940
Ribbed Smoked Sheet	...	54
Contract Crepe	...	52
Mottled Brown Latex Crepe		45 to 50
Brown Scrap Crepe	...	47

The Madras Market

Current on 4th July 1940

The controlling factor in the local market has been, as in previous weeks, the news of the war in Europe. Generally speaking since the capitulation of France markets have if anything shown a slightly better tendency and the upward movement in leading market counters was more marked today following the announcement that a considerable portion of the French Fleet was in the possession of the British. It is likely that share prices will still be liable to further setbacks but it has been of some encouragement that small investment buying orders are finding their way into the market at lower levels. Business of course remains almost at a standstill and in fact with markets so very narrow and margins between buying and selling prices so very wide any but the smallest business is almost impossible to negotiate. The Government Security market is steadier and prices are considerably above the minimum prices fixed by the Bombay Stock Exchange.

Rubber.—There has been practically nothing doing in this section of the local market. Under normal conditions last week's announcement of further American purchases of up to 100,000 tons to be delivered before the end of the year would have been sufficient to have caused a rise of anything from Re. 1 upwards in the majority of rubber shares. If anything the reverse is the situation and the market finds difficulty in absorbing even the present small offerings. Coorgs were offered at Rs. 24-8 as. without interesting any buyers. Cochin Malabars sagged to Rs. 5-8 as., and the announcement of only a 7½% final dividend making 15% for the year was considered as somewhat of a disappointment particularly as the average price of rubber during the past nine months has been higher than in the boomlet of 1936-37. Velliamattams have announced a 10% dividend making 15% for the year. Travancore Rubbers on the other hand had good buyers in the market at around Rs. 5-10 as. while Tropicals were also supported at Rs. 14-12 as. Malankaras recorded a further drop at Rs. 30 sellers. The trend of sterling rubber shares according to today's cable from London is still downward. Rani Travancores are now 9*sh*., a fall of 6*d*. Kerala Calicuts have dropped to 11¼*d*., Poonmudis to 9*d*. Malayalams are quoting at 21*sh*. 3*d*.

Teas.—Small but steady business has been conducted in a few of the leading tea shares at more or less unchanged prices. Chembra Peaks at one time fell to Rs. 8 but at the close business was done at up to Rs. 3-1 anna. United Nilgiris continued to meet with small support at Rs. 109-8 as., and Periakaramalais at Rs. 16. Small business was possible in Devasholas at Rs. 6 but there were likely buyers over. Peermades were unchanged at Rs. 24-12 as. cum the final dividend of 10% making 20% for the year.

FORTNIGHTLY RAINFALL STATEMENT

June 9, 1940 to June 22, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	5·70	N. R.	48·55	54·25	25. Kotagiri ...	1·72	0·92	20·29	22·93
3. Kallar B'dge	12·90	8·11	26·63	47·64	26. Ootacamund...	2·13	1·53	14·12	17·78
4. Koney ...	7·36	5·75	27·74	40·85	27. Yercaud ...	3·14	0·30	17·86	21·30
8. Twyford ...	9·53	9·87	31·73	51·13	30. Devarshola T.E.S. ...	0·58	2·98	7·55	11·72
9. Pettimudi ...	4·61	16·22	34·38	55·21	31. CALICUT ...	2·84	7·33	11·46	21·63
10. Kalaar ...	4·19	14·20	27·83	46·22	32. Kuttiyadi ...	5·08	...	13·64	18·92
11. Chittavurrai...	2·10	1·08	21·84	25·02	33. Vayitri ...	1·01	6·69	13·09	20·79
12. BODI'KANUR...	...	...	8·67	8·67	34. Manantoddi...	0·07	2·10	8·92	11·09
13. COCHIN ...	7·78	4·49	23·48	35·75	35. Bilgiris ...	3·31	1·40	15·84	20·55
14. Mooply ...	5·05	8·12	21·67	34·84	38. Pollibetta ...	1·14	3·22	9·23	13·59
15. Pachaimallai	3·89	5·37	21·00	30·26	39. Coovercolly ...	0·16	N.R.	10·25	10·41
16. Mudis ...	4·98	8·49	24·21	37·68	41. Kadamane ...	0·62	8·74	12·64	22·00
17. POLLACHI ...	...	0·70	11·79	12·49	43. Merthisub'gey	...	3·31	14·73	18·04
18. Ropeway Waterfall ...	1·98	4·40	14·96	21·34	45. Balehonnur ...	1·14	3·12	9·78	14·04
21. Kerala Estate	9·06	6·37	28·23	43·66	46. MANGALORE ...	3·15	9·72	7·53	20·40
22. Naduvattam	1·41	4·21	11·17	16·79	47. MADRAS ...	0·11	0·60	6·02	6·73
24. Coonoor ...	1·22	2·55	16·39	20·16					

N.R. = No Return Received.

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

It will be remembered that at the General Meeting on 9th April there was passed a resolution asking that the Association should be represented on the Export Advisory Council which it was known the Government of India intended to set up.

Government published later a resolution dated 11th May in which it was stated that such a Council had been set up, and that its functions would be as follows:—

(*a*) To act as a channel of communication between the Government of India and the exporting interests of the country so as to facilitate the discussion of difficulties arising out of the War and the legislation and regulations consequent thereon;

(*b*) To make recommendations regarding the best means of expanding the aggregate exports of staple commodities and, in so far as the customary markets for such commodities are partly or wholly closed as a consequence of the War, to suggest the appropriate ways and means for promoting a demand for these commodities in alternative markets;

(*c*) To make recommendations regarding the methods of expanding the exports of the products of Indian manufacturing industry, and to promote interest among Indian manufacturers in the expansion of their sales overseas;

(*d*) To make recommendations as to the assistance which can be given by the Government of India to unofficial trade delegations which may be despatched by organised trades or industries to study conditions in overseas markets.

The following was to be the composition of the Council:—

(*a*) A Chairman and Vice-Chairman to be nominated by the Government.

(*b*) Nine members to be appointed as to one each by the following associations particularly concerned with export trades:—

(*i*) Bombay Grain Merchants' Association,
(*ii*) East India Cotton Association,
(*iii*) Bombay Millowners' Association,
(*iv*) Karachi Indian Merchants' Association,
(*v*) Southern India Skins and Hides Merchants' Association,
(*vi*) Calcutta Baled Jute Association,
(*vii*) Calcutta Hides and Skins Shippers' Association,
(*viii*) Indian Jute Mills' Association,
(*ix*) Ahmedabad Millowners' Association

(*c*) Four members to be appointed, as to two each, by the Associated Chambers of Commerce of India and by the Federation of Indian Chambers of Commerce and Industry.

(*d*) Two members to be appointed by the Government of India as representative of the principal international exporting houses.

(*e*) Five members to be nominated by the Government of India as representative of interests not otherwise adequately represented on the Council.

It will be seen that no provision is made for direct representation of the U.P.A.S.I. In paragraph 5 of the resolution however it is provided that those members of the Council resident at the respective ports should be constituted into local committees, to which additional members may be appointed by Government, if that appears expedient. The Association has now learnt that the President of the U.P.A.S.I. ex-officio, or his nominee, will be a member of the Committee for Madras, which will have jurisdiction in respect of all the ports of Southern India.

U.P.A.S.I. ANNUAL CONFERENCE

Members will have received by the time this issue of the *Chronicle* is published the revised programme for the Annual General Meetings. The Rubber Section Meeting will be held in Cochin on 1st August as arranged, and the meetings at 'Glenview' will formally be opened by H.E. The Governor of Madras on the afternoon of Monday 5th August; but the Scientific Conference proposed for Tuesday 6th August has been cancelled and the other meetings moved forward one day. The cancellation of the Scientific Conference is regrettable, as this innovation proved so successful last year, but it is felt that with so many assistants on military service it is extremely difficult for planters to find time for a full week of meetings, and the number of meetings has therefore been cut down to the minimum.

Members will note also that the Association will have the honour of entertaining H.E. The Viceroy to lunch at the Ootacamund Club on Sunday 4th August. It is a happy coincidence that the Viceroy should be in Ootacamund at the time of our Annual General Meetings, and members will appreciate the honour he has done the Association in finding time to attend a function of this sort at so critical a period in the history of India.

MEMORANDUM ON THE COFFEE SCIENTIFIC DEPARTMENT

The importance of scientific work to agricultural production receives ample recognition at all meetings of agriculturists and no presidential address on such occasions is complete without some reference to it. Furthermore, practical experience with every crop has shown that scientific investigation has never failed to produce results of value to the producer, either by increasing acreage yields or reducing production costs. Coffee is no exception to this in either respect and it can be said without any doubt that large areas of coffee in South India have succeeded in weathering the extreme depression entirely as a result of the application of scientific research to practical estate management.

There is, however, a reverse side to this picture. In spite of the abundant proof of the value of scientific work to agriculture, the provision of adequate finance to make such work effective is often extremely reluctant, and in times of depression there is a strong tendency to regard such services as luxuries. While public expression of the value of scientific work is clear and definite, it is not always kept clearly in view in the day to day administration of estates and in the preparation of annual budgets, when every item tends to be scrutinised strictly from the point of view of an annual profit and loss account. Unfortunately, expenditure on scientific research cannot be regarded in this way; fresh results of immediate practical advantage cannot be expected every year, and even if they could, many of them could hardly find expression in a financial statement. This memorandum is prepared with a view to explain once more the work and aims of the U.P.A.S.I. coffee scientific department and to try and show the importance of maintaining an adequate service of scientific research and advice. While fully realising the extremely unfavourable financial position of the coffee industry, I would emphasise that the ability of a substantial coffee industry to survive in South India depends on an increase in efficient scentific management, in the development of which a scientific department occupies a key position.

The U.P.A.S.I. coffee scientific department has never had sufficient funds to constitute an independent research organisation and it has indeed been fortunate that, thanks to the kindness of the Mysore Government, it has been possible to arrange that the U.P.A.S.I. coffee scientific staff should work in co-operation with the Mysore Government Coffee Experiment Station at Balehonnur. Although the U.P.A.S.I. maintains a small sub-station in Coorg, the work of this would be quite impossible if it were not that much more extensive resources are available at need at Balehonnur. The co-operative effort has made it possible to provide planters with a scientific service out of all proportion to the U.P.A.S.I. coffee scientific department budgets. In spite of this these budgets have shown an excess of expenditure over income for years and the staff have been working under terms greatly below those expressed in their original agreements.

The co-operation between the U.P.A.S.I. officers and the Mysore Coffee Experiment Station makes it very difficult to discuss the work of the former separately from the general programme of the latter. A full account of the general lines of work and some of the results obtained from the co-operative effort was given in a note published in 1938.

This memorandum is intended to supplement that note with further details of the work in progress mainly carried out by the U.P.A.S.I.

officers, to illustrate how the scientific department is attempting to meet the needs of a depressed industry. It must not be forgotten that this work is at present only made possible by the arrangement of work in association with the Mysore Coffee Experiment Station.

The work of the department can be conveniently considered under the heads of investigation and advisory services.

Investigations.—The research work in progress consists of five main lines:—

(*a*) Leaf Disease and its control.
(*b*) White Borer and its control.
(*c*) Tree growth and development in relation to yield.
(*d*) Establishment of young plants in 'difficult' areas.
(*e*) Factors affecting yield in Robusta.

These lines will be commented upon in turn.

(*a*) *Leaf Disease and its control.*—The fact has been clearly established that over very substantial areas of coffee in South India, leaf disease (*Hemileia vastatrix*) is the most important single cause of reduced yields and lowered vitality of *Coffea arabica.* No excuse is therefore needed for the devotion of considerable attention to the improvement of methods of control and to studies in co-operation with the plant breeding officer of the Mysore Coffee Experiment Station aimed at the isolation and multiplication of disease resistant types of coffee. Although the latter line of work is of a 'long range' description, there can be no doubt that this is the only really satisfactory solution of the problem of low yield and poor health of large areas of adult coffee in South India.

From the point of view of immediate assistance to the grower, studies directed to improved efficiency of direct control measures such as spraying can be amply justified by results. Of the earlier work, the satisfactory results obtained with reduced (2-2-40) mixtures and with the omission of adhesives and spreaders provided substantial economies to the grower. At the same time, studies on the seasonal behaviour of the disease provided a basis for more efficient use of sprays in the control of disease. Of the work actually in progress at present, studies on the effect of different volumes of spray mixture and of different nozzle sizes are pointing the way to further increases in efficiency without increase in costs. Studies have been undertaken to see if still weaker spray mixtures will give effective control, in view of the special conditions brought about by the War. Finally tests are in progress of new proprietary fungicides to assess accurately their efficiency relative to Bordeaux mixture. In this way planters may be provided with more efficient mixtures or protected from undue expenditure on unproven materials.

Work of this description can be readily assessed and the value to the grower is obvious. There can be little doubt that this work alone has given the industry far more than the amount of money spent on the department.

(*b*) *White Borer and its control.*—The importance of this pest needs no emphasis as in recent years it has undoubtedly provided the coffee planter with his major worry. Work was taken up on this pest in Coorg when the situation became so serious three or four years ago and it was intended to supplement and extend the work already done or in progress under the Mysore Government Entomologist. The studies which have been made entirely by the Assistant Scientific Officer have been directed mainly to the assessment of various control measures, including stem rubbing with or without the application of various stem washes. The time required for field experiments on these control measures and the great difficulty encountered in interpreting the results makes it impossible to suggest any very striking changes in the treatment of this pest. It has been shown that stem rubbing still remains an extremely sound method of control and work at present planned will, it is hoped, lead to an increase in the efficiency of this method by improving the timing of the work. The work on stem washes has shown that these are of value but that the materials so far tested do not possess repellent properties and their usefulness is limited by the difficulty of timing the application. Further search is in progress for materials combining ovicidal properties with repellence and work on timing applications continues.

At the same time fresh studies on the life-history and habits of the pest have been undertaken to see if any other control possibility exists, and to clear up several points with respect to the emergence periods.

While it is unlikely that any very strikingly new results will come to light, since this pest has been subjected to very close study for many years, it does seem possible that the work now in progress may enable planters to use control measures already known with more confidence in their usefulness, and a clearer realisation of their limitations.

(*c*) *Tree growth and development in relation to yield.*—The possibility of applying methods of observation similar to those which have given such valuable results with temperate fruit crops, has constantly been kept in view. Experience with coffee for some years suggested that interest in soils and manures had tended to obscure the importance of the plant itself in coffee crop production. As a result of this, detailed studies of a group of adult trees were initiated in March 1938 and are still being continued. Records have been maintained of leaf and shoot production and flower and fruit development on this group of trees at intervals corresponding to the major seasonal divisions of the year.

A large mass of data has been accumulated and this is being sorted out. It is too early to discuss the results of this work, which is still incomplete, but enough has been done to indicate fruitful lines of approach to problems of both manuring and pruning. It is clear that the growth and development follows quite different lines, according to the crop being borne by the tree, pointing to the great necessity of arranging treatments with respect to the tree condition. The great confusion that exists with regard to pruning coffee and the very uncertain results which have attended manurial trials may very probably be referred to a lack of appreciation of the different needs of trees when they are exhausted, bearing light crops or bearing heavy crops.

While no direct benefits can be indicated at the moment, I think it must be obvious to every coffee planter that one of the major needs of the industry is a clearer understanding of what the consequences of cultural treatments are. At present, only in the most extreme cases is it possible to foresee the effect of treatments and to plan work with any certainty of obtaining economic responses. Close and detailed observation of tree behaviour can alone form the basis of a clearer understanding of the plant's reaction to its environment and to cultural treatments.

At the same time, the work does permit one to make suggestions on various questions of pruning and manuring even although they still lack complete experimental proof. The danger of pruning trees suffering from exhaustion following a heavy crop illustrates one point on which advice has been given. It may seem an obvious point, but nevertheless it is one which is often overlooked.

(*d*) *Establishment of young plants in 'difficult' areas.*—My experience leads me to the view that many of the problems of the coffee industry can only be met by replacement of trees either selectively or by wholesale replanting. In a number of areas, there seems little difficulty in establishing young plants although much remains to be done on the most economical and satisfactory way of carrying it out. In other areas, the difficulties are considerable. In South Coorg the assistant has given much attention to this problem. His work permitted the first accurate diagnosis of one of the major difficulties in that area, and while no adequate control measures have yet been discovered it was possible to suggest the abandonment of various practices which were obviously useless, with consequent economies. Other observations suggested modifications in the type of plant used for planting and in the time of planting which have proved themselves valuable. Some experiments also suggested the value of fertilisers in establishing young plants, in areas not too seriously affected by the soil pests which cause so much loss.

Further work is designed to study in detail certain treatments of the soil and the plants at or immediately prior to planting out, with a view to improving their establishment in these areas. Although this work at present only concerns one area seriously, it may be that with more attention being paid to the possibility of replanting, similar problems may arise elsewhere.

The problems presented by these difficult areas are very great and there is no question that a very considerable expansion of staff and equipment would be required to solve the fundamental problems involved. All that is possible at present is to attempt various possible ameliorative treatments and watch the results in the field. To sort out the pest complex and the predisposing soil and plant factors would require much more time and money than can be provided at present.

(*e*) *Factors affecting yield in robusta.*—The increased planting of robusta coffee in South India has led to an extension of work to this crop. The major problems presented by this crop under South Indian conditions appear to be the frequent crop failure and the great heterogeneity of the planted areas. This year a commencement was made to study the yield variation over a considerable block of robusta coffee with a view to selection of good types. The yield studies are to be combined with studies on fruit setting and on vegetative characters. It is hoped to improve the types in cultivation and to find the reasons for crop failure with a view to developing appropriate cultural correctives. It seems likely that one of the major requirements is drought resistance and this is to be kept prominently in view.

These five main lines represent the work of the Association's officers. It represents only a part of the work going on for the coffee industry with which these officers keep in close contact. The result is that a considerable mass of information is available from the Department on a wide variety of questions connected with the growth and preparation of coffee. This is always at the disposal of members and correspondence files show that help has been given from time to time on many problems which cannot but have been of economic benefit to the enquirer.

To sum up the work, it is directed, firstly, to assist in the control of the two major causes of loss of productive capacity—Leaf Disease and

Borer; secondly, to investigate the growth and development of the coffee plant with a view to rationalising the main cultural measures; thirdly, to provide information to assist in the problems which arise or may arise in replanting; and fourthly, to seek means of improving robusta production.

All these lines of work are directly related to practical problems and some of them have already provided information of direct practical value. There is every reason to believe that the future work will be equally productive, and that the money spent will show a satisfactory return to the industry.

W. Wilson Mayne,
28th May, 1940. *Coffee Scientific Officer.*

Mr. Mayne's note above deals with the work done for Coffee in the field and in the laboratory—valuable and essential work, but as is obvious from the note handicapped throughout by lack of money.

The income of the U.P.A.S.I. Coffee Scientific Department is derived from three sources—a grant from the Coorg Government, a share of a grant from the Madras Government, and subscriptions from members.

The Coorg Government make to the Department an annual grant of Rs. 3,000; Coffee is the most important plantation product in Coorg and the grant towards research work in coffee cultivation is a token of the Coorg Administration's recognition of this fact.

The Madras Government has in the past made an annual grant to the U.P.A.S.I. Scientific Departments, of which a share has been allotted to Coffee. This grant was originally Rs. 28,000, of which coffee received Rs. 7,560; it was reduced as a measure of economy in 1935 to Rs. 21,000, coffee's share being reduced to Rs. 5,610; and a further reduction was made in 1938 to Rs. 12,000. On this last occasion it is significant that the Madras Government stipulated, apparently in recognition of the depressed state of the coffee industry, that the share of the Coffee Scientific Department should be Rs. 7,000. This grant from the Madras Government is guaranteed only up to the end of the year 1940-41, when it may be still further reduced or even discontinued altogether; if the latter course is adopted, it may entail, for reasons which will be apparent later, the end of the U.P.A.S.I. Coffee Scientific Department together with the resultant benefits which it brings to all planters throughout South India whether subscribers to the Department or not.

The third source of income is subscriptions by coffee planters themselves, members of U.P.A.S.I., which are levied at the rate of one anna per acre from subscribing estates in Mysore (which in addition pay a compulsory cess of two annas per acre on their coffee acreage towards the Mysore Government Station) and three annas per acre on estates outside Mysore. The cess is compulsory on all members of the U.P.A.S.I. owning more than 150 acres of coffee; in addition, a number of members owning less than 150 acres pay the cess although not liable under the U.P.A.S.I. Articles to do so. Members of the U.P.A.S.I., in addition to the cess towards the Scientific Department, pay a subscription to the U.P.A.S.I. Head Office, in common with other products, of three annas nine pies per acre.

The chief difficulty the Department has to face financially is the smallness of income from subscriptions. The subscribing acreage in 1937-38 was

44,000; it dropped during the following year to 42,300 and in 1939-40 to 41,700; for the current year the subscribing acreage is expected to show a small increase to 42,700. The annual income from subscriptions at the rates quoted above is approximately Rs. 6,000. It is felt that in the present state of the coffee industry, which for the past ten years has been struggling against a period of low prices in the world coffee market, any increase in the subscription is beyond the means of the average planter, and the Coffee Section Committee are convinced that any attempt to increase the cess would result in a decrease in the subscribing acreage. In consequence of the smallness of the income from this source, the Department has since 1933 been showing every year without a break an excess of expenditure over income; this has occurred in spite of the most stringent economies, an example of these being the fact that the Scientific Officer after eleven years' service is now drawing a salary of only Rs. 800 per mensem, as compared with Rs. 1,100 or Rs. 1,200 which he might reasonably expect in view of his qualifications. This restriction of his salary has been voluntarily agreed to by Mr. Mayne. but the Coffee Section Committee feel that the position is most unsatisfactory and that the present conditions cannot be allowed to continue indefinitely. Excess of expenditure over income, plus certain other payments such as the annual subscription to the British Empire Producers' Organisation, have been met each year from the Coffee Section Reserve, but this in the period 31-3-1933 to 31-3-1940 has been reduced from Rs. 55,000 to Rs. 17,000, and obviously cannot be relied on much longer. During that period the amount drawn annually to meet the deficit on each year's running has been between Rs. 1,100 and Rs. 3,200; during the last two years the amount has been cut down to Rs. 1,400 and Rs. 1,100 respectively, and for the current year is expected to approximate Rs. 700.

The purpose of this note is to bring to the attention of coffee planters the difficult position which the U.P.A.S.I. Coffee Scientific Department now faces, and to urge most earnestly on those who are not already members of the Association that they apply for membership. The Association as a whole represents the interests of coffee planters in general in such matters as legislation, labour items, communications, etc., and an indication is given in the note above of the work done by the Coffee Scientific Department. The subscription to the Association Head Office is three annas nine pies per acre, with a reduction of one anna six pies for those Indian members who do not wish to subscribe towards Political representation; in addition to this the subscription to the Scientific Department as mentioned above is three annas per acre, or one anna per acre in the case of estates in Mysore; there are special minimum rates for estates of less than 150 acres. The importance of the work done by the Association, both in its general aspects as representing tea, coffee and rubber planters throughout South India and also in particular through its Coffee Scientific Department must already be familiar to you, but the potential value of the Association to planters cannot be fully realised unless it represents an overwhelming majority of the Plantation Industry. In the case of tea and rubber it does this; in the case of coffee it is estimated that there are about 50,000 acres of plantation coffee in holdings of over 150 acres each which do not belong to the Association. It is to the owners of these 50,000 acres that this note is primarily addressed in the hope that they will seriously consider applying for membership of U.P.A.S.I.

A. G. ACASTER,
Secretary, U.P.A.S.I.

MALARIA PROBLEMS IN THE WYNAAD

By Lt.-Col. G. Covell, M.D., D.P.H., I.M.S.,
Director, Malaria Institute of India.

As far as can be ascertained from the records available, the Wynaad has always had an unenviable reputation for malaria. There is, however, a considerable variation in the number of cases which occur each year and also in the severity of the disease itself, so that in some years an increase in the intensity of the annual epidemic causes serious labour difficulties in the local estates. The most malarious period of the year extends from March to the beginning of June, the peak being usually in May. The epidemic is terminated by the onset of the monsoon in June and the consequent flushing out of the breeding places of the local malaria-carrying mosquito. There may also be a small secondary outbreak of malaria in the autumn.

About the year 1912, the Wynaad Medical Association was formed by the East Indian Tea and Produce Company and the Meppadi Wynaad Tea Company, for the special purpose of combating malaria. Dr. F. Milton, a pensioned medical officer of the Egyptian Government, was appointed Chief Medical Officer of the Association, and he put forward proposals for malaria control which were accepted and adopted by the Boards concerned. The Association also applied to the Government of Madras for aid, and Captain J. H. Horne, I.M.S., Special Malaria Officer of the Presidency, was deputed to report on the local malaria conditions in 1913. This officer supported the recommendations made by Dr. Milton, and also drew attention to streams as being important breeding places of *Anopheles fluviatilis*, which he incriminated as a malaria carrier by the results of his dissections. Unfortunately, however, it was not then realised that this mosquito was the sole carrier of importance in the Wynaad, and that its breeding places were highly specialized, and the control measures actually undertaken as the result of the recommendations of Milton and Horne appear to have been directed almost exclusively towards the clearance and drainage of swamps and the planting of these with eucalyptus trees, together with the removal of vegetation from the vicinity of coolie lines.

In 1930, the Government of Madras was again approached with a request to take steps to control malaria in the Wynaad, on this occasion by the Malabar District Board. A brief survey was carried out at Vavittiri by the Special Malaria Officer, Madras, in 1931, but this was not followed by the adoption of any scheme of malaria control.

In 1935, the Ross Institute established a centre at Meppadi, with the object of controlling malaria in a group of tea estates. The antimalaria measures instituted in these estates during the last five years have resulted in a very striking decrease in the annual number of malaria cases occurring among the labour forces employed in them, with a corresponding improvement in their general health.

In 1937, a sum of money was sanctioned by the Government of India for rural antimalaria work. Part of this was allocated to the Government of Madras, on condition that the latter contributed an equal amount, for schemes to be undertaken in Madras Presidency. One of the localities selected for such a scheme was the Wynaad. A research unit from the Malaria Institute of India was sent to this area early in 1938, the intention being that the personnel of the Madras rural malaria unit would thus be able to obtain technical training, and to profit by the results of the research unit's investigations.

There have thus been three different antimalaria organisations operating in the Wynaad in recent years: the Ross Institute, with its centre at Meppadi; the research unit of the Malaria Institute of India located at Sultan's Battery; and the Madras rural malaria unit with its headquarters at Kalpetta. The work of the Ross Institute has been confined to the estates, but the data obtained by it have been freely placed at the disposal of the other two units, whose investigations have been concerned with rural malaria problems in general.

It has been proved beyond dispute that in the Wynaad there is only a single species of mosquito, *A. fluviatilis*, which need be taken into consideration as a malaria carrier, and that this species is a house-haunting mosquito which requires very specialized breeding places. *A. fluviatilis* made up approximately 70 per cent of the total number of anopheline mosquitoes caught in human dwellings by the Malaria Institute unit, and only one per cent of the number caught in cattle-sheds. The proportion of this species found by dissection to harbour malaria parasites was extremely high, the infection rate exceeding 26 per cent during the height of the transmission season in both 1938 and 1939. Examination of the stomach contents of a large number of specimens by a special test similar to that used in medico-legal work showed that 97 per cent had fed on human blood.

The chief breeding places of *A. fluviatilis* are rice-field drains and streams with grassy edges. The larvæ are never found in the ricefields themselves. Swamps in their natural condition are completely innocuous, for the water in them contains too much organic matter for this species to breed in. They are only dangerous when attempts are made to drain them. *A. fluviatilis* prefers sunlit breeding places, though its larvæ are also found in waters which are partially shaded. In August and September it breeds in wells, the water of which is close to the ground surface at this time of year, and contains a certain amount of aquatic vegetation. It is thus a clean water breeder, normally found in channels or streams with grassy edges and a moderate current, but making use of shallow wells in the monsoon season when these breeding places are washed out by heavy rain. It usually breeds in the vicinity of human dwellings.

It is indeed unfortunate that the above facts were not recognized when the question of malaria control in the Wynaad was first taken up.

MALARIA CONTROL MEASURES

In considering the question of malaria control in the Wynaad, it is essential to remember that conditions within the estates differ in many important respects from those obtaining in the rural areas outside their boundaries. The tea estates are situated on high ground, on the slopes of hills where there is a good fall and free drainage. The population is housed on certain selected sites, and is under strict disciplinary control. Again, the estates are run on strictly business lines; the financial loss caused by malaria among the labour forces can easily be calculated, and it can be seen at a glance that the expenditure of funds on the reduction of malaria constitutes not an extravagance, but a wise form of health insurance, and is in fact a paying proposition.

Outside the estates, rice is cultivated on comparatively flat land, the population is scattered at random throughout the countryside and there is no sort of disciplinary control over them. Moreover, there is no immediate financial return to be looked for by the expenditure of funds on antimalaria measures. It is not difficult to understand that the control measures appropriate to such widely different circumstances must necessarily themselves differ in many important respects.

The antilarval measures which have been found most successful in the tea estates are the flushing of streams and drains, the growing of dense shade over breeding places, and oiling. In certain cases excellent results have been obtained in small streams by the use of kuchcha dams with wooden sluice-gates which can be erected at a very small cost. In larger streams concrete dams have been installed with gates made either of wood or iron. In all cases the mode of action is the same, the sluices being operated at intervals as required. A large number of larvæ are actually killed by the force of the flush, whilst others are stranded on the banks, either above the dam when the water level is lowered, or below it as the wave progresses downstream. In Ceylon, and in some parts of India, automatic siphon sluices are in use for this purpose, but these usually need frequent attention and inspection, and hand-operated sluices are probably more suitable for general use in this country. They are less costly than automatic sluices, are not likely to be interfered with, require very little attention, can be operated at any desired time, and the whole contents of the reservoir can be emptied instantaneously, thus ensuring the maximum effect of the flush.

As regards use of dense shade as an antilarval measure, this has to be very complete to achieve success, and is only suitable for narrow streams or drains. Good results have been secured by this method in certain estates. The use of oil is regarded as a temporary measure, and is now being largely superseded by the so-called naturalistic methods described above.

Sometimes it is possible to improve local health conditions in more than one direction by a combination of methods. For instance, on one estate in the Wynaad where malaria was formerly a serious problem, the chief source of *fluviatilis* breeding was a stream whose bed was obstructed by large number of boulders. It so happened that stone was required for building new coolie lines on the estate. Instead of quarrying the stone on the hill-side, boulders were removed from the stream bed for this purpose. A dam with a sluice was placed at the head of the stream, and a pipe led off from the reservoir above it to supply water to the lines. In this way stone was provided for building purposes, obstructions removed from the stream, allowing the flush to operate successfully, whilst at the same time a safe drinking water supply was provided for the labour force.

More recently antilarval measures on estates in the Wynaad have been supplemented by the systematic spraying of dwellings during the malaria season with pyrethrum insecticide in order to kill adult mosquitoes. This method is now widely used throughout India and in the opinion of the writer represents the greatest advance in malaria control which has been made in recent years. When it is remembered that it is only the mosquito which has fed on a person with malaria parasites in his blood and has thereafter succeeded in living for a fortnight which can transmit the disease, the importance of this method can be readily appreciated.[1]

Hitherto all the pyrethrum sprays available in this country have been imported from abroad, but in recent years attempts have been made to cultivate the plant in many parts of India. It has now been proved that pyrethrum of good quality can be grown without difficulty in Kashmir, the North-West Frontier Province, the Punjab Hills and the Nilgiri Hills, and it is certain that within a few years there will be an ample supply of Indian-grown pyrethrum, so that an effective insecticidal spray will be available at a very low price.

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[1] In order to facilitate spraying, it would be an advantage if coolie lines on estates were so designed that all openings may be easily closed. Thus, the ventilation space between the roof and walls might be provided with hinged flaps which could be lowered or raised as required.

As regards antimalaria measures in rural areas outside the estates, the problem of controlling breeding places is beset with difficulties. The principal source of breeding is the rice-field drains. These are not suitable for flushing and the growing of densely shading plants along their margins has proved impracticable, owing to interference on the part of villagers and the depredations of cattle and other animals. A series of experiments has been carried out during the past two years by the research unit of the Malaria Institute of India to determine whether the method of herbage packing was applicable in the Wynaad. This consists of trampling freshly-cut green herbage into the bed of the stream or drain, and anchoring this in position by cross pieces and vertical stakes where necessary. The object is to change the composition of the water by the decomposing organic matter, thus making it unfit for the breeding of *A. fluviatilis*. The packing is put down in February and remains till the onset of the monsoon rains, when it is washed away. By this time the malaria season is practically over, since all the breeding places of *A. fluviatilis* are flushed out and the larvæ destroyed. The experiments were successful, the breeding of *A. fluviatilis* being completely abolished in the sections of drains which were treated. Unfortunately, however, it has become increasingly evident that whilst this method costs practically nothing, and is extremely efficacious when carried out under adequate supervision by an intelligent person who can be relied on to retain his enthusiasm, without such supervision it is doomed to failure. The persistence of the packing intact is dependent on the character of the rainfall during the spring months. If there are no heavy downpours during this period, all is well, but a heavy shower may occur at any time, and then the whole system must be inspected, and the drains re-packed in any section where damage may have occurred. It is thus only under exceptional circumstances that success is likely to be achieved by this method.

As regards the flushing of streams, this may be useful in certain special cases, but it is obviously not a measure suitable for general application in the Wynaad outside estates, where instead of a narrow stream flowing in a rocky bed with a steep gradient there is usually a wide channel with earthen banks, grassy edges, and a moderate current.

It is thus evident that in the Wynaad, as has been the common experience in rural areas in malarious countries throughout the world, the prospect of effective larval control is remote. The measure which is most likely to reduce malaria in this area is the spraying of dwellings with pyrethrum insecticides alluded to above. When this was first introduced into India, it was thought that it could only be applied in the case of personnel housed in well-built quarters. Experimental work in Delhi Province, Madras Presidency and Coorg, has, however, shown that it is also applicable in villages. Its introduction requires a certain amount of tact, but once its use has been explained and demonstrated it invariably becomes extremely popular. It is in fact the only antimalaria measure to which this adjective can be applied, and in that lies its greatest hope of success. After a while, the villagers can usually be left to do the actual spraying themselves, thus reducing labour costs, but it is probable that periodical supervisory visits will always be necessary, for it is the universal experience of sanitarians that the individual, if left to himself, will rarely lift a finger to safeguard his own health and that of his family.

TEA QUOTA PRICES

Owing to the transfer of Rights not being permissible the Quota market remains closed at present.

STORIES FROM A PLANTERS' CLUB

'A REGRETTABLE AFFAIR'

By 'Jeff'

In the annals of Stiff Range there can have been fewer finer friendships than that which existed between McStickit, of St. Mungo Estate, and Hybrow, of Avalon Estate. Indeed, David and Jonathan would have been hard put to it to have given a better display of good-neighbourliness than these two.

For years these paragons had been shining examples to the district; and a particularly exemplary feature of their mutual esteem was their habit of exchanging gifts every Christmas. . . . None of your trumpery Christmas cards for *them;* but good, solid, valuable gifts, expressive of the deep friendship which inspired them. So that, for instance, when a clock chimed in McStickit's bungalow, he would be reminded of Hybrow's exploit during their undergraduate days, when an intimate article of bedroom crockery had mysteriously appeared on the weather-cock of the city clock-tower. And, when the gong sounded for dinner outside Hybrow's dining-room, that worthy would be reminded of his friend, McStickit, draining his gin-and-bitters at that precise moment a few miles away across the valley.

Comment was often made on the incongruity of these two inseparables, as they had very little in common, to all appearances. McStickit is the solid type of Scottish Planter which Mr. Somerset Maugham delights to portray: almost as broad as he is tall, dour, efficient, and with a heart of gold encased in granite. Hybrow, on the other hand, is a typical Southron, and more closely resembles one of those willowy young Merchants from our great coastal cities, who appear in the Hills from time to time and counter the friendly approaches of bucolic Planters with a defensive stare through their horn-rimmed spectacles, coupled with a 'Pardon?', which conveys a mixture of indignation and disdain, reminiscent, somehow, of an outraged hen. (Though it must be stated, in fairness to Hybrow, that he has not yet acquired the 'Pardon?' habit.)

This well-grounded friendship had endured for years, and seemed part of the accepted scheme of things. But, alas for the mutability of human affairs! . . . A vinous party led to a splenetic argument between the two friends, culminating in bitter recriminations and personalities; so that, in a few short minutes, the Demon Rum (disguised, in this instance, as a dimpled Scot) had wrecked the sterling friendship of many years.

That each considered himself insulted first, is hardly worth recording; but McStickit was on firmer ground than Hybrow, as he could, and triumphantly *did* assert, that he had been insulted 'in my own bungalow!'

McStickit was 'one up', and he meant to hold the lead.

As the actual cause of the quarrel was trivial enough, the Sassenach reader will naturally say: 'Why not end the beastly thing?' But, in saying this, how innocently he betrays his ignorance of the Scottish character!

The Scots are essentially a manly race; but, quite apart from their preference for the kilt, there is one other characteristic which they share conspicuously with the fair sex, namely: their love of a thoroughly resounding, prolonged and embittered *quarrel*, with, of course, the rights of the case unquestionably on their side.

To paraphrase H. H. Munro: A Scot will endure discomforts, and make sacrifices, and go without things to an heroic extent; but the one luxury he will *not* deny himself is—his quarrels. No matter where he may live, or how transient his appearance on a scene, he will instal his Scottish feuds as assuredly as a Frenchman would concoct soup in the waste-lands of the Arctic regions.

So much for Hybrow's chances of reconciliation.

Nor is this all. Women, who enjoy a good quarrel every bit as much as a Scot, often do so almost as much for the pleasure of the prospective reconciliation as for the enjoyment of the quarrel itself. Not so the Scot. There are recorded instances of Scottish feuds which have lasted for hundreds of years. Readers who know their Leacock will remember how no member of the Clan MacSomething had spoken to a member of the Clan MacOrother for four hundred years. They will remember, too, how the quarrel began over (of all things) a point of spiritual belief. How, in the early days of the Reformation, when every man was his own Pope, and each man maintained that his own interpretation of Scripture was obviously the correct one, how theological argument became the ruling passion in almost every house north of the Tweed. How, immersed in argument and usquebaugh, Shamus MacSomething, mad with drink, had maintained that damnation could only be obtained by faith; whereupon, Manus MacOrother, crazed with liquor, had maintained that damnation could also be obtained through good works; and how the bitter quarrel which ensued had estranged the two families for centuries.

They will recall that, four hundred years after this incident, a rich MacSomething came across wee Jeannie, daughter of the poverty-stricken MacOrother, and how he gave her sixpence, and how, when she gleefully carried it back to her father, old MacOrother cried: 'What! Siller fræ a MacSomething?! . . . Neverrrr!' And how, picking up the sixpence, he dashed it on the ground, and, picking it up again, he dashed it against the wall, and, picking it up again, he dashed it into his pocket.

Enmity like this is the peculiar gift of the Scot, as is, also, a capacity for the staunchest friendship in happier circumstances. . . . After which digression, I must get back to the main incident of my story. Shorn of unnecessary 'padding', it is this: that, one moonlight night, while out with their guns in a lonely part of the jungle some way from their respective estates, both these protagonists fell into the same disused elephant-pit, from which egress without ropes was impossible.

It was Hybrow who fell in first, and yelled himself hoarse trying to attract the attention of some shikari who might happen to be in the vicinity; and it was not until some hours later, by which time his voice was reduced to a mere croak, that he found himself joined, involuntarily, by McStickit, of all people. Neither man was seriously hurt, thanks to the accumulation of rotted leaves and vegetation at the bottom of the pit; and, judging from his obvious surprise at finding his neighbour similarly imprisoned, it was clear that McStickit had not heard Hybrow's shouts for help.

For quite a while after McStickit's arrival in the pit there was what the novelists call 'a pregnant silence'; and though Speech usually finds a willing enough obstetrician in Hybrow, even *he* felt momentarily at a loss when confronted with the massive solemnity of McStickit's silence (which reminded him of Maurois' 'Colonel Bramble').

But, if silence is McStickit's long suit, it is certainly not Hybrow's; neither (it was clear to McStickit) had that light-minded Southron any conception of how long a properly conducted quarrel should last: for, inevitably, Hybrow rushed upon his fate, imagining (foolish optimist that he was) that their unfortunate, and even dangerous, predicament might serve as the means of their reconciliation.

'Well, old man,' began Hybrow, heartily, 'this seems to be an accident expressly designed by Fate so that we can end this ridiculous quarrel of ours, what?'

No reply.

Hybrow tried again: 'This reminds me of that story about the two landowners in the Carpathians, or somewhere, who had quarrelled, as we have, and who were accidentally pinned under the same falling tree in a forest at night.'

No reply.

'They became reconciled, you may remember,' went on Hybrow, gamely, 'though the fact that they were subsequently eaten by wolves doesn't make our present predicament any the more enjoyable to contemplate.' And here he emitted a mirthless sort of hoot, intended to convey a care-free air of camaraderie which he was far from feeling.

Still no reply.

After that, Hybrow gave it up, and concentrated on his pipe and self-communion, and so made the rest of the night bearable, until, by a stroke of luck, their tracks were found, and the two neighbours were discovered and rescued the following morning—McStickit having preserved his devastating silence from start to finish.

Hybrow wended his weary and aching way back to his bungalow, where a bath, and a hearty breakfast, soon restored his tissues and his good humour. The more he thought about the preceding night, and his quarrel in general, the more was it borne in on him that, to a Scot, a quarrel is really a long-drawn-out, grimly-and-solely-to-be-savoured, Gargantuan *jest*, at the expense of the 'quarrelee', so to speak. A somewhat selfish jest, perhaps; but, nevertheless, of the sort fully in keeping with the pawky humour and granite nature of the Caledonian.

Hybrow felt much better after making this discovery, and only wished that he was in a position to share it with his erstwhile friend. Suddenly another thought struck him; and he reached for Hoare's catalogue, from which he made a rapid selection, followed by arrangements for the delivery of a silver tantalus, which he felt sure McStickit would appreciate as a Christmas gift.

New Year's Day arrived, and with it, a parcel for Hybrow, addressed in McStickit's writing. . . . Filled with pleased anticipation, Hybrow cut the string and opened the package, to disclose his tantalus.

In spite of his chagrin and disappointment, Hybrow could not repress a smile. 'At any rate,' he said to himself, 'we're "all square" now, because I have been insulted *in my own bungalow!*'

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The Tantalus now decorates Hybrow's side-board; and, along its base, is inscribed: NEMO ME IMPUNE LACESSIT. And, as an Australian friend who had read the inscription laconically summed up:—

'*Too* right!'

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 6th July were:—

Rubber, including export licences ...	53.00 cents a lb.
Rubber Export Quota	13.00 cents a lb.
1st quality rubber	40.00 cents a lb.

DISTRICT NOTES

NILGIRI-WYNAAD

Minutes of an Extraordinary General Meeting of the Nilgiri-Wynaad Planters' Association (Incorporated) held at George Memorial Hall, Gudalur, on Wednesday the 12th June 1940, at 2-30 p.m.

Present:

Messrs. A. N. Scott Hart (*Chairman*), A. Foote, J. C. Nicolls, J. McBride, C. W. Burgess, W. R. Grove, M. W. Mackay, W. L. Roberts, R. P. N. Swayne, C. K. Pittock, T. Ryan, and N. Johnston (*Honorary Secretary*).

An apology for absence owing to indisposition was received from Mr. R. N. W. Jodrell.

The Honorary Secretary read the notice calling the meeting.

Minutes of the previous meeting having been published in the *Planters' Chronicle* were taken as read and confirmed.

N.W.P.A. subscription.—It was proposed by Mr. Johnston and seconded by Mr. Pittock 'that the N.W.P.A. subscription for the year ending 31-3-1941 should remain at six pies per acre'.

S.I.P.B. Fund.—One case was discussed and the Honorary Secretary was given the necessary instructions.

Correspondence, etc.—Read correspondence between Mr. W. K. M. Langley, O.B.E., M.L.A., Nilgiri Planters' Association, Wynaad Planters' Association, Calicut Chamber of Commerce and this Association in connection with Ootacamund-Vayittiri-Calicut Road.

The following resolution was proposed from the Chair and carried unanimously: —

'In view of the steady deterioration of the Choladi-Gudalur Section of the Ootacamund-Calicut Trunk Road and the increase in heavy traffic, this meeting unanimously asks the U.P.A.S.I. to request Government to take over the Ootacamund-Gudalur-Choladi Section and place it under the P.W.D. with a view to getting this road into the very satisfactory condition of the Calicut-Choladi Section at present with the P.W.D.

'Two members, Messrs. Swayne and Ryan are prepared to form a deputation to meet the Minister concerned if the U.P.A.S.I. considers it necessary.'

The meeting terminated with a vote of thanks to the Chair.

Minutes of the Twenty-second Annual General Meeting of the Nilgiri-Wynaad Planters' Association held at the George Memorial Hall, Gudalur, on Wednesday the 12th June 1940, at 3-15 p.m.

Present:

Messrs. A. N. Scott Hart (*Chairman*), A. Foote, J. C. Nicolls, J. McBride, C. W. Burgess, W. R. Grove, M. W. Mackay, W. L. Roberts, R. P. N. Swayne, C. K. Pittock, T. Ryan, and N. Johnston (*Honorary Secretary*).

The Honorary Secretary read the notice calling the meeting.

CHAIRMAN'S ADDRESS

Gentlemen,

Since our last Annual General Meeting we are at war again with Germany—the following have already volunteered and left the district: Messrs. Alderson, Dove, Gilbart-Smith, Heron, Little, Merson, Metcalfe, McKenzie, Osborne and Stonehouse. We wish them the best of luck. It is gratifying to know that they have gone with the good wishes of the planting industry and that their jobs are waiting for them on their return, *Articles of Association.*—Although we have held few meetings during the year, there has been more work for the Honorary Secretary than for many years past; this was due to the visit of the Ministers, and also to our revised Articles of Association. I am pleased to be able to tell you that after months of correspondence with the Registrar of Joint-Stock Companies our Articles have been sanctioned by the Government and are now in order.

Labour.—During June, an informal meeting was held to which non-members of the Association were invited to meet Mr. F. E. James, and later in the month, another meeting was called to meet the Minister of Labour (Mr. Giri), and of Agriculture (Mr. Muniswami Pillai); the Ministers visited certain estates in the district during their tour. Labour has been plentiful and satisfied and although at the outbreak of war prices reigned high for a short while, this has been stopped, and the cost of living for essentials has not increased unduly.

Crop.—

Tea.—At the beginning of the year we had a severe drought but it did not affect us as badly as it might have done owing to the late rains received during November 1939. There was a considerable increase in crop—63,77,935 lbs. yielding 540 lbs. per acre as against 56,97,841 lbs. yielding 459 lbs. last season.

At the outbreak of hostilities our Tea was taken over by the Ministry of Food, and since January 1st 1940 estates have been allowed to tender their crop f.o.b., shipping to be done by Government to the Ministry of Food, to be paid at the average prices received during season 1936-38 with an additional 1*d.* per lb. for increased costs.

Coffee.—The crop this season is 148 tons against 127 tons last year.

Communications.—The roads in the district go from bad to worse. It is hoped to pass a resolution at the Annual General Meeting of the U.P.A.S.I. to ask the P.W.D. to take over the Ootacamund-Choladi Section, and I am pleased to say we have been promised support from the Nilgiri and Wynaad Planters' Associations, also the Calicut Chamber of Commerce. With reference to the secondary roads these are of great importance not only to us for the transport of our goods but to every ryot and individual. These roads are steadily deteriorating and some sections are appalling. Grants for upkeep in numerous cases have been cut and the money is insufficient to keep the roads even in a moderate state of repair. The chief item of work appears for contractors to blind the roads with soil just before rain is expected, which makes them highly dangerous and unpleasant for motor traffic, but I assume this helps in the work of consolidation and lightening the contractor's burden.

Health.—The health during the period under review was satisfactory and no serious outbreaks were reported.

S.I.P.B. Fund.—The subscriptions received this year are extraordinarily good and I take this opportunity of thanking members for supporting the Fund, also the Honorary Secretary for the trouble he took in collecting this amount.

Subscriptions.—The acreage remains the same as the previous year, the question of subscriptions will have to be decided by you gentlemen, for the last few years we have been drawing from our reserve in the hope that more acreage would join the Association, which if it did would not necessitate an increase of subscription, unfortunately this has not materialised.

My thanks are due to our Honorary Secretary, Mr. N. Johnston, for the work he has done for the Association during the past year. In conclusion, I wish to thank you gentlemen for the support you have given me. I now place my resignation in your hands.

HONORARY SECRETARY'S REPORT

Mr. Chairman and Gentlemen,

I have the honour to submit my report for the year ending March 31st 1940.

Membership.—The subscribing area for the year remains the same as the previous year, namely 11,702.85 acres (Tea 11,109.37, and Coffee 593.48 acres). One Personal Member subscribed during the year which is one less than the previous year.

Meetings.—One Informal, one Committee and six Extraordinary General Meetings were held during the year.

Accounts.—These have been audited and circulated and they are on the table for inspection.

Revenue Account.—Total expenditure at Rs. 592-12-7 is Rs. 149-0-4 more than in the previous year, and expenditure on all items were more with the exception of office allowance, U.P.A.S.I. subscriptions and legal expenses. The biggest increase is in delegates' expenses Rs. 65 which includes Rs. 50 which was not paid in the previous year's accounts. We have therefore been obliged to draw on the reserve and in view of this it will probably be necessary to increase the subscriptions during the current year.

The excess of expenditure over income is Rs. 185-0-3. The financial position is as follows:—

On Current Account with the Imperial Bank of India	Rs.	78	0	11
Postal Savings Account	,,	1,588	4	10
Cash on hand with the Honorary Secretary ...	,,	10	15	7
	Rs.	1,677	5	4

as compared with Rs. 1,992-6-1 at this time last year.

Crop.—

Tea.—The total crop harvested was 63,77,935 lbs. as compared with 56,97,841 lbs. last year.

Coffee.—148 tons this season against 127 tons last year.

S.I.P.B. Fund.—The response to two appeals for subscriptions was satisfactory, the total amount collected being Rs. 1,000 as compared with Rs. 385 in the previous year. The sum of Rs. 1,000 includes two generous anonymous donations.

I shall be pleased to answer any questions about the Accounts or other matters.

I gratefully acknowledge the advice and assistance of the Chairman and the co-operation of the Committee Members during the year, and I now place my resignation in your hands.

It was proposed by Mr. Pittock and seconded by Mr. Ryan 'that a hearty vote of thanks be accorded to the outgoing Chairman and Honorary Secretary for the work they have done during the year'. *Carried.*

Accounts 1939-40.—It was proposed from the Chair 'that the audited Accounts be passed'. *Carried unanimously.*

Election of Office-Bearers.—It was proposed from the Chair that the following be elected *en bloc*:—

Chairman.—Mr. T. Ryan.

Honorary Secretary.—Mr. G. L. Hay.

Committee.—Messrs. M. W. Mackay, C. K. Pittock, W. L. Roberts and R. P. N. Swayne.

Carried unanimously.

It was proposed from the Chair, 'that Mr. K. V. Gopalaiyer, B.A., G.D.A., be re-elected auditor of the Association for the current year'. *Carried.*

Mr. Ryan then took the Chair and thanked the members of the Association for having elected him.

Bank Account.—It was proposed from the Chair 'that the Honorary Secretary, Mr. G. L. Hay, be authorised to operate on the Association's Imperial Bank and Post Office Savings Bank Accounts'. *Carried.*

The meeting closed with a vote of thanks to the Chair and to George Memorial Hall Committee for the use of the room.

N. Johnston, A. N. Scott Hart,
Honorary Secretary. *Chairman.*

CORRESPONDENCE

The Editor,
Planters' Chronicle.

Dear Sir,

The following figures of tea consumption and exports may be of interest to your readers. They are taken from the *Bulletin of Statistics of the International Tea Committee* for April 1940.

Annual Absorption of Tea
In Million lbs.

U.K. ... ... 1939 figures not yet published.

	1939	1938
Netherlands	29	24
Canada	42	37
U.S.A.	96	80
Egypt	15½	17
S. Africa	18	15
Australia	51	48
New Zealand	11	11

Exports of Tea from India

	1938-39	1937-38
to U.K.	310	292
Canada	15	15
U.S.A.	8	6
Iran	5	4
Australia	1¼	¾

Exports from Ceylon

to U.K.	154	166
Canada	9	8
U.S.A.	16	12
Australia	11	13
New Zealand	9	8

Exports from N.E.I.

to U.K.	9	21
Netherlands	29	27
U.S.A.	29	20
S America	6	7
Iran	5¼	5
Iraq	5	5
Egypt	12	12
S. Africa	5½	3½
Australia	38	33

China's exports for 1939 only totalled 49¾ million lbs. as against 91¾ million lbs. in 1938.

Japan's export for 1939 increased to 51¾ million lbs. as against 37 million lbs. for 1938, the increase being under 'other countries'.

The Bulletin is full of interesting statistics about tea and is well worth studying.

Yours faithfully,
'Tea Student'.

ROYAL INDIAN NAVY, WAR PURPOSES FUND

We publish below a circular letter dated 14th June issued by Captain L. Wadeson of the Royal Indian Navy from the Naval Headquarters, Cochin, for the information of readers.

I wish to bring to your notice the Royal Indian Navy War Purposes Fund.

It is appreciated that you are continually being asked for donations for charitable purposes, but it is thought that as this Fund is being administered entirely for the benefit of Indian Ratings serving with the Royal-Indian Navy, it will be your wish to assist the Fund in its work for these men.

Since the commencement of the War, the Royal Indian Navy has increased its fleet of ships by over 800% and there are now some 3,800 Indian Ratings manning these ships.

The ships of the Royal Indian Navy are in constant patrol along the coasts of India, and keep open the entrance to the main ports of this country. At least once every 24 hours the Minesweepers manned by Indian Ratings are searching for enemy mines and destroying those that are found, thereby making safe the shipping lines for the free entry of ships from all parts of the world, bringing to these shores those commodities which are necessary for commerce and food for the benefit of the people.

The monotony of these increasing patrols will be appreciated and with the object of looking after the welfare of the Indian Ratings a Fund has been started with the permission of His Excellency the Viceroy, to purchase books in the Vernacular and in English, games, cigarettes, warm clothing (for men serving in the Persian Gulf) etc.

May we ask you to show your appreciation of the work carried out by these men by sending a donation? There are no administrative charges to the Fund beyond postage.

Our main object at present is to equip every ship's Mess with a Radio and Loud Speakers so that the Ratings may hear the news and enjoy the programmes in their own language.

Your donation should be forwarded to the above address, payable to the 'R.I.N. War Purposes Fund' and this will be personally acknowledged by Vice-Admiral Fitzherbert, the Flag Officer Commanding, The Royal Indian Navy, in due course.

INDIAN RUBBER LICENSING COMMITTEE

ANNOUNCEMENT

In continuation of the Committee's announcement dated 3rd April 1940 the motoring public in India are hereby informed that the Central Government have been pleased to direct that till the end of the war no restriction should be placed in respect of exports of Indian-made tyres and tubes which are fitted to private cars when such cars are exported from India and therefore no export license will be required for such *bona fide* exports from India of indigenous tyres and tubes attached to privately owned motor cars during the said period.

(By Order)
P. Kurian John,
Rubber Export Controller for India.

Rubber Control Office,
Malankara Buildings,
Kottayam,
Travancore.
9th July 1940,

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sale No. 3 was held on 2nd and 3rd July, 1940.

This was the first sale held since the War-time amalgamation of the four member firms came into effect. With the co-operation of all sections of the trade this scheme worked very satisfactorily.

Under present conditions the greatest care in manufacture and sorting is essential. Teas unsuited to the requirements of the markets are rapidly becoming unsaleable.

DESCRIPTION	Season 1940-41		Average on same date	
	Sale No. 3	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	10 1	10 2	11 1	10 1
For Internal Consumption:—				
Leaf Teas ...	3 7	4 0	4 2	4 2
Dusts ...	5 0	4 10	4 9	4 8
Green Teas ...	5 9	6 2	4 9	...

RUBBER.—London Rubber on July 16, 1940, 12⅛*d.*

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

SOUTH INDIAN TEA

Sales on
July 2 & 9, 1940

Incomplete Invoices.

RUBBER

	Sales on July 4, 1940
Ribbed Smoked Sheet ...	54½
Contract Crepe ...	51¼
Mottled Brown Latex Crepe	47 to 48⅜
Brown Scrap Crepe ...	47½

The Madras Market

Current on 18th July, 1940

Since our last report a fortnight ago Indian Stock Exchanges have recorded a considerable recovery which was heralded by the re-opening of the Calcutta Stock Exchange for normal business subject to the fixing of minimum prices. At the time of writing, however, intermarket leaders such as Indian irons, Bengal steel corps., Tatas, etc. close a little below their recent highest. The Government security market has also been exceptionally firm and 3½% Paper which a fortnight ago was quoting at Rs. 85-8 as. touched over Rs. 90-4 as. on Wednesday, closing at Rs. 88-12 as. Rises have taken place in other loans and in the absence of sellers business has been very difficult to put through. The market, however, views with some hesitancy the latest developments in the Far East and it is probably for this reason that prices close slightly lower.

Rubber.—Since our last report the rubber quota for the third and fourth quarters for 1940 have been increased to 85% from 80%. This has had little to no effect on the price of rubber which continues at around 1*sh*. The price in India is about 39 cents for uncouponed rubber and 13 cents for the coupon. Further dividend announcements are to hand, notably Coorgs a final dividend of 7½% making 27½% for the year. The general undertone in this section was steady to dull but the volume of business has been remarkably small. Cochin Malabars were firmer at Rs. 5-12 as. cum the dividend of 7½% while an isolated transaction was put through in the 7% preference shares at Rs. 60-12 as. Thirumbadis received limited support at Re. 1-5 as. but Malankaras had sellers over at the close at Rs. 27-8 as. Tropicals were in demand at Rs. 15 in small lots and Kalpettas at Rs. 14-12 as. Coorgs were slightly lower at Rs. 23-8 as.

Teas.—A wider enquiry has been noticeable during the past fortnight for local tea shares. This is probably due to the fact that we are now approaching the period when many companies pay their final dividends. Vellamalais at the close were quoted at Rs. 10-10 as. buyers and have just announced a dividend of 5% as against 2½% last year. Peermades were steady at Rs. 24-12 as. while Periakaramalais advanced to Rs. 16-8 as. The final distribution of these two companies is awaited with interest. Kalasas turned buyers at Rs. 6 while Chembra Peaks advanced to Rs. 3-2 as. at which price there were sellers over. There were small offerings of Nilgiri Neerugundis at 12 as. and Ouchterloney Valley 6% debentures at Rs. 101.

FORTNIGHTLY RAINFALL STATEMENT

June 23, 1940 *to July* 6, 1940—*(Inclusive)*

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	9·46	7·88	33·47	50·81	25. Kotagiri ...	0·86	0·41	22·93	24·20
3. Kallar B'dge	7·38	6·29	47·64	61·31	26. Ootacamund...	4·23	1·40	17·78	23·41
4. Koney ...	7·51	6·19	40·85	54·55	27. Yercaud ...	1·74	0·91	21·30	23·95
8. Twyford ...	16·52	24·34	51·13	91·99	30. Devarshola T.E.S. ...	14·32	6·79	11·72	32·83
9. Pettimudi ...	39·78	34·68	55·21	129·67	31. CALICUT ...	11·93	9·52	21·63	43·08
10. Kalaar ...	24·39	18·59	46·22	89·20	32. Kuttiyadi ...	...	17·30	18·92	36·22
11. Chittavurrai...	1·60	0·83	25·02	27·45	33. Vayitri ...	26·51	19·60	20·79	66·90
12. BODI'KANUR ...	...	...	8·67	8·67	34. Manantoddi...	15·76	19·80	11·09	46·65
13. COCHIN ...	3·50	5·59	35·75	44·84	35. Bilgiris ...	3·43	2·83	20·55	26·81
14. Mooply ...	6·15	8·18	34·84	49·17	38. Pollibetta ...	14·11	5·27	13·59	32·97
15. Pachaimallai	12·61	10·04	30·26	52·91	39. Coovercolly ...	14·80	7·37	13·04	35·21
16. Mudis ...	21·31	14·95	37·68	73·94	41. Kadamane ...	46·54	24·37	22·00	92·91
17. POLLACHI ...	3·54	1·39	12·49	17·42	43. Merthisub'gey	16·72	9·77	18·04	44·53
18. Ropeway Waterfall ...	8·66	6·11	21·34	36·11	45. Balehonnur ...	N.R.	N.R.	14·04	...
21. Kerala Estate	16·34	12·80	43·66	72·80	46. MANGALORE ...	10·75	6·48	20·40	37·63
22. Naduvattam	16·20	14·14	16·79	47·13	47. MADRAS ...	...	0·02	6·73	6·75
24. Coonoor ...	0·70	0·06	20·16	20·92					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The Annual General Meeting of the Rubber Product Section of the United Planters' Association of Southern India was held at the Cochin Club on the afternoon of Thursday 1st August. The following are extracts from the address delivered by the Chairman, Mr. H. R. Carson Parker:—

'GENTLEMEN,

This is the fourth Annual General Meeting of the Rubber Product Section. The Committee's Report is in your hands and with your permission I will take it as read.

At our last General Meeting I made mention of the Travancore Rubber Control Bill, and the intention of the Government of Travancore to take over the issue of new planting rights in so far as Travancore was concerned. I ventured to point out that both these issues in their original form were fraught with certain difficulties but that as they were to go before a Select Committee it was anticipated that they would emerge in a more satisfactory form. The Control Bill was modified and is now acceptable to all. With regard to the issue of new planting rights, this appears to have worked smoothly, for it is satisfactory to note from the report of the Indian Rubber Licensing Committee that S. India has taken full advantage of the five per cent extension of rubber cultivation sanctioned by the International Committee.

Up to the outbreak of war prices remained fairly steady, and even since then there have been none of those big fluctuations which have been so common in our industry in the past. As anticipated at our last Annual Meeting the International Rubber Regulation Committee raised our permissible export for the last half year, and the average worked out at 58¾% of our Basic Quota. Although these additional releases were only notified at a very late date, S. India had no difficulty in meeting and exceeding them.

The latest revised figures for this year, 1940, work out at 82½%. This high release has had no effect on prices, which remain around a shilling per pound, but this is due to several outside factors and is really no true indication of rubber manufacturers' actual requirements. In the first place we still have a part of the Anglo-American Cotton-Rubber Barter Agreement to fulfil. It has also just been announced that another agreement has been reached with America whereby they are to purchase a reserve stock of between 100,000 and 150,000 tons. Lastly, it is only natural to presume that manufacturers are building up as big reserves as possible in anticipation of shipping difficulties in the near future. It would therefore appear that apart from the slump that always follows a war, there will be such large stocks of crude rubber in warehouses, we must expect drastic cuts in our export quotas.

I regret that we have still not succeeded in getting the import of unlicensed Burma rubber stopped. This is not for want of perseverance on our part, nor would it appear to be the fault of the Burma Rubber Planters' Association. The Chairman of that Association in his speech at their Annual General Meeting on March 8th reiterates his predecessor's remarks that the industry in Burma would prefer the extra quota available under the I.R.R. Agreement, to the freedom to ship unlicensed rubber into India.

Considering that the planting interests in both countries are in complete agreement regarding the removal of this anomaly, brought about by the fact that India and Burma were one when the original Restriction Agreement came into being, it seems unreasonable for the Governments of these two countries not to meet their wishes. Legal difficulties in the India-Burma Trade Regulation Order appear to have been the obstacle, but now that the Government have given notice terminating the agreement these obstacles should no longer exist. As I propose asking Mr. James, who has been in constant communication with Government on the subject, to address the meeting I will not take up any more of your time by also going into details.'

Messrs. J. E. Pitcairn, W. G. Craig, H. R. Carson Parker and J. A. Davidson were elected as the new Committee for the year 1940-41 and at their first Committee meeting immediately after the Annual General Meeting elected Mr. J. E. Pitcairn as the new Chairman of the Rubber Section, and Mr. W. G. Craig as the representative of the Section on the Executive Committee.

TEA FOR THE DUTCH EAST INDIES

In a press announcement early in July it was stated that £40,000,000 worth of tea was being purchased by the Ministry of Food from the Dutch East Indies for the use of the population in the United Kingdom. As members are probably aware, the actual purchase is 40 million pounds *weight* of tea, but we publish this notice in case the position is misunderstood.

COFFEE SCIENTIFIC DEPARTMENT

Quarterly Progress Report of the Coffee Scientific Officer, U.P.A.S.I., for the period January-March 1940.

The following report comprises notes on work in progress during the quarter ending 31st March 1940.

Hemileia Vastatrix.—As usual, work on the testing of families for disease resistance was suspended during the quarter owing to the difficulties of supply of suitable leaves for test and to the difficulties imposed by the climatic conditions.

Tree Observations.—Almost the whole of the quarter was occupied with the tabulation and analysis of the data collected up to the end of December 1939. A further observation was made in early March at approximately the same time as in the two previous years.

Spraying work.—Observations on disease severity were made during the quarter in the experiment started last October to investigate the possibility of further reductions in spray strength. These data have been published in a note in the *Planters' Chronicle.*

The observations in the Spraying Demonstration plots which are normally carried out at the end of February were carried out as usual. They showed a high leaf amount, indicating the mild nature of Hemileia attacks in 1939.

Other work.—Arrangements were made to carry out a manurial trial on a private estate in Mysore. The treatments were to consist of Nitrogen alone, a complete fertilizer mixture and a compost application, with a control unmanured treatment. The layout was a randomized block of six replications and each plot of 100 trees.

The yield of some 1,800 Robusta plants was recorded individually on an estate in Coorg, with a view to studying the yield variability of this crop. The yields in the season were very low but several trees stood out. In fact 23 trees produced 25 per cent of the total crop harvested. This work will be continued in future years with a view to identify high yielders, if they exist and to study the most suitable plot size for future experimental work with Robusta.

Seasonal conditions.—The quarter was dry and extremely cold. The temperatures of March were notably below normal and there was no rain in the locality in the quarter. This is the second year in succession in which the blossom showers have not fallen before the end of March. The condition of the coffee was excellent and although a fair amount of disease appeared to be carried through the dry months, leaf fall was not heavy. On the whole the indications suggest relatively light attacks of Leaf Disease in the coming year although probably not so light as in 1939. Crop prospects are good and there was no sign of drought injury up to the end of the quarter.

Diseases and Pests.—A report of an obscure disorder of coffee was received from the Nilgiris. After exhaustive discussion and the examination of specimens of shoots and roots sent from the affected area, it was concluded that the trees were probably suffering from drought injury or exhaustion from past history coupled with unfavourable weather. In the course of examining roots in soil samples from this area, numbers of Nematode galls were noted on Dadap roots. Enquiries showed that these appeared to exert no deleterious effect on the trees.

A root disease of coffee was received from an estate in Mysore, from which a fungus was isolated, but which has so far been unidentified. The symptoms resembled in some respects those of *Rosellinia*, but differed substantially in others. The damage was rather severe in patches, Specimens of Red borer (*Zeuzera coffeæ*) were received from the Nilgiris but the damage done was of a minor nature.

A report of the recovery of an adult coffee borer (*Xylotrechu quadripes*) as early as the beginning of March was received from an estate in Mysore. Towards the end of the month, adults of this pest were being obtained from young plants in some numbers at the station.

Work of the Assistant.—The assistant was on combined sick leave and annual leave during the quarter. He was engaged for the rest of the time in writing up the results of the previous season's work on borer. He also collected a further series of observations from the Perenox spray trial reported last quarter. These data showed very clearly the value of two sprays in S. Coorg. The relative values of the Bordeaux and Perenox suggested a slight superiority of the latter over the former in this second series of observations but the statistical analysis has not yet been completed.

Correspondence and Publications.—Correspondence has been dealt with as usual.

The following articles were published in the *Planters' Chronicle* during the quarter:—

Note on Mr. Oliver's letter on Coffee Quality.
Note on article dealing with Individual Tree Recording.
Coffee Black Bean.
Coffee Leaf Disease Attacks in 1940.
The Possibility of Reducing the Strength of Bordeaux Mixture for the Control of Coffee Leaf Diseases.
Note on article dealing with Coffee Thrips.

W. WILSON MAYNE,
U.P.A.S.I. Coffee Scientific Officer.

PLANTERS ON MILITARY SERVICE

The following names have now to be added to the lists, published in the issues of 13th April and 25th May, of planters and employees of Companies connected with planting who are engaged in Military Service:—

Name	*Address*
Coorg—	
Babington, H. B. ...	Dubarry Estate, Pollibetta P.O.
Betts, F. N. ...	Coovercolly Estate, Somwarpett P.O.
Bushell, E. A. C. ...	Hutti Estate, Madapur P.O.
Iron, C. S. ...	Huntsey Estate, Somwarpett P.O.
Sprott, J. H. ...	Coovercolly Estate, Somwarpett P.O.
Tipping, S. P. O. D. ...	Canonkad Estate, Sidapur P.O.
Walker, E. R. W. ...	Farewell Estate, Pollibetta P.O.
Mysore—	
Courpalay, C. R. H. de ...	Sampigay Estate, Tarikere P.O.
Graham, J. F. ...	Gunga Giri Estate, Sangameswarapet P.O., Kadur Dt.
Plunkett, P. T. ...	Kadamane Estate, Kadamane P.O.
Stonehouse, C. G. ...	Attikan Estate, Attikan P.O.
Travancore—	
John, C. H. ...	Periakanal Estate, Surianalle P.O.
Langford-James, J. C. ...	Madupatty Estate, Munnar P.O.
Milne, G. W. P. ...	Periakanal Estate, Surianalle P.O.
Robinson, G. S. ...	Sevenmallay Estate, Munnar P.O.
Williams, G. E. L. ...	Talliar Estate, Talliar P.O.

INVESTIGATIONS ON THE NUTRITION OF COFFEA ARABICA L.

Note: This article is based on two reviews of a paper by J. C. s'Jacob entitled Voedingsphysiologische Onderzoekingen bij Coffea arabica L. published in the *Archief voor de Koffiecultuur*, XII, 1938, pp. 1-48 and on some notes in the Third Annual Report of the Lyamungu Coffee Experimental Station 1936. The original of the first article was not available but a full summary was published in *Die Ernahrung der Pflanze*, XXXV, pp. 115-18, 1939, and some additional notes were obtained from the abstract in the *Review of Applied Mycology*, XXXIII, pp. 21-22, 1939.

In temperate countries a great deal of work has been done to study the effect of depriving plants of various elements with a view to studying the symptoms produced by deficiencies so that such symptoms may be used as a guide to the plant's requirements. Results of very great value have been obtained in this way for fruit trees. The usual method is to grow young plants either in water culture or in sand culture so that the various mineral elements supplied can be carefully controlled. It must be made clear that the results of such culture experiments can only be used with caution; more as a guide to the identification of deficiencies or as a means of discovering the importance of minor elements in nutrition than as a direct guide to manuring practice. It is, of course, understood that plants will frequently respond to manures without any preceding signs of deficiencies.

The present note is based on some recent work carried out in Java and East Africa, in which the technique of water culture and sand culture has been applied to the study of the same problem for arabica coffee. It was found that in a culture solution of suitable composition coffee seedlings would develop very well for several months but the Java results indicated that the culture solution used must be acid and must contain a good supply of iron. Experiments with a number of neutral or weakly acid culture solutions showed them to be unsuitable as symptoms of iron deficiency rapidly appeared even when iron humate was added to the solutions. Only in a solution devised by Shive with an acidity of pH4.5 did the plants develop normally. The iron deficiency showed itself as a typical chlorosis—the leaf colour became yellowish while the veins still retained the normal green tint.

In the early experiments in Java, it was clearly shown that coffee requires a supply of boron. If this element was absent, the plants developed small narrow spical leaves with brown markings, which later blackened and dried up. This was followed by the death of the leaf buds. Small shoots originated in the axils of the upper leaves but these also developed the same symptoms. In the East African experiments, plants which received a special nutrient mixture containing boron, manganese and copper in addition to the usual plant foods, showed generally, a larger development than those which did not receive these minor elements. No remarks were made with respect to any special symptoms in the absence of copper, manganese or boron. It may be remarked that symptoms of the type described from Java have been seen by the writer in the field, though not on an extensive scale. It cannot be said that they were actually signs of a boron deficiency but it seems not unlikely, judging by the illustration given in *Die Ernahrung der Pflanze*.

In recent years a considerable body of information has accumulated on the importance of boron to plants and a number of diseases have been shown to be due to boron deficiency. Whether coffee would respond to applications of boron remains to be investigated, but it may be mentioned that if it should do, it is unlikely that more than a couple of pounds of borax per acre would be required. Boron is one of those elements in plant nutrition for which the border line between safety and injury is very narrow.

Of the major elements absorbed by the plant, studies were made in Java of the symptoms developed when nitrogen, phosphoric acid, potash, calcium, magnesium and sulphur were withheld. In East Africa the studies were restricted to deficiencies of nitrogen, phosphoric acid and potash. Observations were also made in Java on the effects of an excess of some of these plant foods. Most of the symptoms described in this article were recorded by s'Jacob in Java. The details available of the East African work are less complete, but with one exception, agree in all essential points with those from Java.

The effect of withholding nitrogen were, as might be expected, very far reaching. Within a month of transference of the young coffee seedlings to the culture solution without nitrogen, the check to growth was visible. Both root and shoot development was severely checked, but more so in the case of the shoots. The leaves produced were small and uniformly yellowish (differing from iron deficiency symptoms where the veins retain a green colour) and later an orange brown discoloration developed. It seemed that younger leaves were developed at the expense of older ones, the latter dying off as the former are produced. It is stated that typical symptoms of this kind have been noted in the field. In studies with different amounts of nitrogen, it was found that at low concentrations, roots were long, thin and very little branched whereas at concentrations above normal the development was reversed.

In contrast to this, the absence of phosphoric acid produced no visible symptoms, though it is pointed out that the normal dark green colour of coffee leaves would prevent the easy recognition of the usual sign of a deficiency of phosphorus (i.e. the development of very dark green foliage). In both the case of this plant food and of potash which will be dealt with below, it seems that either the supplies contained in the seed or those absorbed in germination and preliminary growth before supplies were withheld, were sufficient for normal development for the comparatively short duration of the experiments. Similar results were obtained in the East African experiments; on the other hand, in some trials carried out with coffee in pot culture in Munich, it was a deficiency in phosphoric acid which showed the most striking features (Nicklas, H. and Schropp, W., *Tropenpflanzer*, 1931, 34, pp. 269-77). Naturally, the absence of symptoms in these experiments cannot be regarded as an indication of a lack of need of these food materials.

Excess of phosphoric acid also produced no definite symptoms in the experiments carried out.

As has already been indicated, lack of potash showed no very marked symptoms in Java, though there was a slight check to growth. In order to get over the difficulty introduced by the supplies of this element present in the seed or taken in prior to experimental treatment, coffee seeds were germinated in a poor volcanic sand and transferred, before the expansion of the cotyledons, to the culture solution minus potash. Shortly after transference, the remains of the seed were removed and a few days later, the cotyledons were cut off. In this way the potash content of the seedling was reduced as much as possible. Better results were obtained in this way, but symptoms did not appear until the end of three months. These symptoms consisted of small light yellow spots around the leaf margins, which rapidly turned greyish brown. This marginal injury was separated from the healthy leaf tissue by a light yellow coloured zone. This type of leaf rim injury is a very common symptom of potash deficiency in many plants. This injury was noted in the field at one place in Java and pot tests with maize revealed a very marked potash deficiency in the soil in question. In the East African experiments, on the contrary, potash deficiency symptoms were the first to develop, being visible as early as 16 days after the commencement of the treatment. These were similar in essentials to those recorded by s'Jacob.

The difference in the results with respect to this element cannot be readily explained on the information available on the experimental methods used in each case. It may serve, however, as an instance of the difficulties of this type of work.

Excess of potash caused no very marked symptoms beyond a check to growth and some pale spotting of the leaves rather suggestive of iron chlorosis. The leaves of such plants died prematurely.

Calcium deficiency was the quickest to show up, the first symptoms—a death of the root tips—becoming visible 14 days after the commencement of the treatment. Later a marked reduction in the length of the aerial parts occurred and the leaves curled and became a yellowish green with localized brownish patches. Following this the apical bud died off and though new shoots originated in the upper leaf axils, these developed the same symptoms.

An excess of calcium, if given in the form of calcium chloride only slightly retarded growth without the development of any marked symptoms. If the calcium was given in the form of calcium carbonate, however, the results were quite different. A severe chlorosis developed which was undoubtedly due to a deficiency of iron. The decrease in acidity caused by the calcium carbonate had reduced the availability of iron in the culture solution. While it must be repeated that results from water cultures must be treated with reserve, these observations suggest that the iron availability in the soil is very important to coffee and soils on the alkaline side may interfere with the intake of this important element, if the alkalinity is due to excess of lime. At the same time, the buffering action of most soils is such that additions of lime at ordinary rates alter the acidity only slightly. The mere presence of iron in the soil even in considerable quantities is not necessarily sufficient to provide the plant with adequate supplies, as has been clearly shown in the case of pineapples in Hawaii and Porto Rico where in manganese soils and calcareous soils respectively, iron deficiency symptoms appeared which were not corrected by simple addition of iron salts to the soil.

The absence of magnesium also caused quite definite and characteristic symptoms. The leaves showed small white to greyish spots concentrated in a zone about two-fifth of an inch from the leaf edge and the tissues within this region were flaccid, while those without were turgid. The symptoms appeared after 3-4 months and as the older leaves dried off, the younger ones developed the symptoms. In addition to the leaf symptoms, root development was poor. Excess of magnesium caused very serious injury—growth was checked. the stem was thin and sometimes showed signs of rotting at the base. the leaves were small and pale and later developed an intervinal chlorosis and the roots were short, thick and slow growing.

If sulphur was omitted growth was checked and the general development was rather poor but not so markedly as when nitrogen and calcium were omitted. There was no signs of chlorosis such as are associated with sulphur deficiency in tea.

There are considerable difficulties in applying the results of experiments of this type to field conditions, especially as results of such experiments are not always concordant and in any case are concerned with conditions entirely different from those experienced by a plant growing in ordinary soils. As a general rule, shortages of such elements as boron, magnesium and sulphur are not very probable and are rarely likely to need artificial reinforcement.

The most interesting points of practical importance arising from these experiments are the necessity for adequate supplies of calcium, the sensitiveness to iron deficiency, the intolerance shown to alkaline conditions and the importance of boron.

The symptoms described afford a means of detecting signs of deficiencies in the field, although experience in S. India does not suggest that marked deficiency symptoms are of common occurrence under field conditions. Occasional temporary symptoms of nitrogen shortage have been noted, and some phenomena similar to those described for boron deficiency have been met with. Potash deficiency symptoms have never been seen nor have any definite cases of calcium deficiency been noted.

This does not mean that coffee soils in this country are necessarily satisfactory in respect to these elements as obviously, a supply enough to prevent pathological symptoms appearing, may yet be insufficient to permit the best development of the plant.

Finally, it must be borne in mind that these experiments were all conducted with young plants and do not afford any information on the requirements of the cropping plant.

18*th July* 1940. W. WILSON MAYNE,
Coffee Scientific Officer.

SOUTH INDIAN TEA RE-EXPORTED FROM CEYLON

During the month of June 1940.

Destination.	*Lbs.*
United States of America	33,310
Australia	20,459
Canada	176,955
Other Countries	24,212
Total	254,936

AVERAGE PRICES OF COMMON TEAS—JUNE 1940

	Wholesale (*Selling prices of dealer to retailer*)			*Retail* (*Selling prices of retailer to consumer*)		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly ...	0	7	6	0	8	2
Tanjore ...	0	8	9	0	9	6
Kumbakonam ...	0	8	5	0	9	5
Mayavaram ...	0	8	9	0	9	8
Tiruvarur ...	0	8	6	0	9	2
Pudukottah ...	0	8	0	0	8	6
Karur ...	0	8	5	0	9	8
Erode ...	0	8	2	0	8	9
Tiruchengodu ...	0	8	3	0	8	9
Namakkal ...	0	8	3	0	8	9
Salem ...	0	8	1	0	8	9
Dharmapuri ...	0	8	4	0	8	10

DISTRICT NOTES

ANAMALLAIS.

Minutes of the Thirty-fifth Annual General Meeting of the Anamallai Planters' Association (Incorporated) held at the Anamallai Club, Valparai, on Wednesday, 26th June, 1940, at 2-30 p.m.

Present.

Messrs. F. J. B. Diaper (*Chairman*), G. Bayzand, C. F. Clark, H. Gerry, R. M. Greig, O. M. Hetherington, B. Henney, H. W. Hutton, A. R. Jack, G. L. Jack, E. Johnson, G. B. Reade, H. W. E. S. Rogers, H. H. Stuart, R. Walker, C. Wynell-Mayow and G. Stevens (*Honorary Secretary*).

By Proxy.—Mr. R. H. C. Allen.

Notice calling the meeting.—The Honorary Secretary read the notice calling the meeting.

Confirmation of Minutes.—The following minutes, having been previously circulated, were taken as read and confirmed:—

The minutes of the Thirty-fourth Annual General Meeting held on 5th July 1939 and the minutes of the Extraordinary General Meeting held on 11th November 1939.

Adoption of Minutes.—The following minutes of the General Committee Meetings, having been previously circulated, were taken as read and adopted:—

Of 21st June 1939, 1st July 1939, 7th August 1939, 6th September 1939, 11th October 1939, 13th November 1939, 3rd January 1940, 31st January 1940, 4th March 1940, 28th March 1940, 29th April 1940 and 30th May 1940.

CHAIRMAN'S ADDRESS.

The Chairman addressed the meeting as follows:—

Gentlemen, Since our last meeting we have received news of the death of Flying Officer Pat. Hewett, an old member of this Association. Our Honorary Secretary has written conveying our sympathy to Mrs. Hewett.

The past year has been a momentous one, I refer to the outbreak of war. Many of our members are now on active service and we wish them Godspeed and safe return. All our energies must be concentrated to achieve victory, and make the world a safe place for free people to live in.

Tea.—A short-term contract was concluded by Estates with the Food Controller and now a long-term contract is in operation. Most of the administrative difficulties have been settled, and the final result seems to be satisfactory to all.

Coffee.—From reports the crop was not very good, and owing to a disturbed market prices realised were low. We can only hope for better times ahead.

Cardamom.—Special attention is being given to a scheme to investigate pests and diseases of cardamoms. It is possible a new Sub-Committee of the U.P.A.S.I. will soon be formed to deal solely with this product.

Telephones.—Government are still considering this question, and we hope that Mr. Brokenshaw will visit us shortly, and the matter will be satisfactorily settled.

Memorandum and Articles of Association.—These will come before the High Court, Madras, on the 18th July for confirmation.

Cinchona Fire.—Estates have received payment for all labour engaged during the fire. Our thanks are due to Mr. Greig for the good work he did in bringing about a very satisfactory settlement with Government.

Roads Congress.—Our Honorary Secretary has been registered as a member, and we hope that the information gained through this channel will be of great practical value to us all.

Ghat Road.—I am sure you will like to record our thanks for the interest taken by the Executive Engineer and his subordinates. The road has been kept in good order and many important improvements have been made.

Anamallai Club.—Our thanks are due to the President, Committee and members for allowing us the use of the Club for meetings, free of charge.

In conclusion I would like to thank the members of the Committee for their help and especially to Mr. Stevens our Honorary Secretary for all he has done.

I now place my resignation in your hands.

REPORT OF THE HONORARY SECRETARY FOR 1939/40.

Personal Members.—The Personal Membership of the Association is 78—an increase of two from last year. Seven new members were elected and five members left the district during the year.

Estates.—The number of estates subscribing to the Association remains the same as last year, viz., 39.

Acreage:—

	1938–39 Acres	1939–40 Acres	Increase Acres	Decrease Acres
Tea	26,567.76	26,553.03	...	14·73
Coffee	2,093.89	2,088.89	...	5·00
Cardamoms ...	3,094.58	3,392.58	298	...
Cinchona ...	165.00	245.00	80	...
	31,921·23	32,279·50		

A total nett increase of 358.27 acres.

For the season 1940-41, 33,277.39 acres are subscribing to the Association.

Crop:—

	1938–39	1939–40	Increase	Decrease
Tea ..	14,692,563 lbs.	15,171,282 lbs.	478,719 lbs.	...
Coffee ...	526.75 tons.	511.50 tons.	...	15.25 tons.
Cardamoms ...	126,560 lbs.	52,996 lbs.	...	73,564 lbs.
Cinchona ...	97,426 ,,	58,296 ,,	...	39,130 ,,

Southern India Planters' Benevolent Fund:—

1937–38	1938–39	1939–40	Decrease
Rs. 1,285 0 0	Rs. 1,080 0 0	Rs. 970 0 0	Rs. 110 0 0

Twenty-seven Personal Members did not subscribe to the Benevolent Fund.

Correspondence.—2,647 letters were received and 12,660 letters and circulars were despatched during the year under review.

Meetings.—One Annual General Meeting, one Extraordinary General Meeting and 18 Committee Meetings were held during the year under review.

Electricity Scheme.—The gross profit was Rs. 1,425-9-6; but a sum of Rs. 901-6-3 was spent in the construction of overhead lines to new consumers leaving a nett profit of Rs. 524-3-3.

Auditors.—At the Thirty-fourth Annual General Meeting of this Association, Messrs. Fraser and Ross were appointed Auditors for the current season; they retire at this time and are eligible for re-election.

I now place my resignation in your hands.

Proposed by Mr. R. Walker and seconded by Mr. C. F. Clark 'That the Report of the Honorary Secretary, A.P.A. for 1939/40 be passed.'

This was put to the meeting and passed unanimously.

Accounts.—Proposed by Mr. G. L. Jack and seconded by Mr. O. M. Hetherington 'That the Accounts for 1939/40 be passed.'

This was put to the meeting and passed unanimously.

A.P.A. Budget for 1940/41.—Proposed by Mr. G. B. Reade and seconded by Mr. C. F. Clark 'That the budget for 1940-41 be passed.'

This was put to the meeting and passed unanimously.

Election of Auditors for 1940/41.—Proposed from the Chair 'That Messrs. Fraser and Ross be re-elected Auditors for 1940/41 on a remuneration of Rs. 150.' This was put to the meeting and passed unanimously.

Election of Office-Bearers for 1940/41:—

Chairman.—Mr. F. J. B. Diaper. Nominated by Mr. E. Johnson. Proposed by Mr. G. B. Reade. Seconded by Mr. G. Bayzand. This was put to the meeting and passed unanimously.

Honorary Secretary.—Mr. G. Stevens. Nominated by Mr. E. Johnson. Proposed by Mr. G. B. Reade. Seconded by Mr. G. Bayzand. This was put to the meeting and passed unanimously.

Minor Forest Produce Collector.—Proposed from the Chair 'That Mr. G. Stevens be appointed Honorary Secretary, Minor Forest Produce, and be authorised to take such steps as he deems fit for the collection of Produce.' This was put to the meeting and passed unanimously.

Nomination of the General Committee of the A.P.A.:—

(1) *Anamallai Tea Estates, Ltd.*—Mr. A. V. Danagher.

(2) *Anglo-American Direct Tea Trading Co., Ltd. and The Amalgamated Tea Estates Co., Ltd.*—Mr. G. L. Jack.

(3) *Bombay-Burmah Trading Corporation, Ltd.*—Mr. C. E. Dennys.

(4) *English and Scottish Joint Co-operative Wholesale Society, Ltd.*—Mr. F. J. B. Diaper.

(5) *Estates and Agency Co., Ltd. and Waterfall (Anamallai) Tea Estates, Ltd.*—Mr. B. Henney.

(6) *Naduar Estates Ltd., Puthutotam Estate Co., Ltd. and Korangumudi Estate Co., Ltd.*—Mr. E. N. House.

(7) *Peria Karamalai Tea and Produce Co., Ltd. and Vellamalai Tea Co., Ltd.*—Mr. R. M. Greig.

(8) *Stanmore (Anamallai) Estates, Ltd.*—Mr. G. B. Reade.

At the conclusion of the meeting, Mr. Walker, on behalf of the meeting, accorded a very hearty vote of thanks to the Chairman for all the work which he had done in guiding the affairs of the Association through the difficulties of the past year.

There being no further business, the meeting terminated.

F. J. B. Diaper, G. Stevens,
Chairman. *Honorary Secretary.*

MUNDAKAYAM.

Minutes of the Thirty-fifth Annual General Meeting of the Mundakayam Planters' Association held at the Mundakayam Club, on Wednesday the 26th June, 1940, at 3 p.m.

Present.

Mr. W. G. Craig (*Chairman*), Messrs. J. J. Murphy, R. M. Saywell, H. B. Macpherson, O. J. Egan Wyer and G. Macpherson (*Hon. Secretary*).

Notice calling the meeting.—The Hon. Secretary read the notice calling the meeting.

Confirmation of Minutes.—Minutes of the Thirty-fourth Annual General Meeting were taken as read and confirmed.

Report of the Committee of Management.—Typed copy of this was circulated to members. The Chairman asked if members had any comments to make, and if the report of the Committee of Management may be adopted.

Proposed by Mr. H. B. Macpherson and seconded by Mr. O. J. Egan Wyer 'That the Report of the Committee of Management be hereby adopted.' *Carried.*

Accounts for season 1939-40.—These have been previously audited and certified copies of the Revenue and Expenditure Account and Balance Sheet had been circulated to members on the 8th of June 1940.

Proposed by Mr. H. B. Macpherson and seconded by Mr. O. J. Egan Wyer 'That the Revenue and Expenditure account and balance sheet for 1939-40 as circulated be adopted.' *Carried.*

It was resolved that the Chairman of the Association, Mr. W. G. Craig be authorised on behalf of the Committee of Management to swear to and sign the report for the year ending 31st March 1940.

Budget for 1940-41.—Draft budget for the season 1940-41 had been circulated to all members with the recommendation that a cess of 9 pies per acre be collected for the ensuing year.

Proposed by Mr. J. J. Murphy and seconded by Mr. O. J. Wyer 'That Mr. W. G. Craig continue as Chairman and Mr. O. J. Egan Wyer be elected as Honorary Secretary for the ensuing year.' *Carried.*

The following gentlemen were elected to the Committee of Management:—Messrs. J. J. Murphy, R. M. Saywell, H. B. Macpherson and A. A. Angus.

Proposed from the Chair 'That Mr. V. Vadivel Pillai be elected as Auditor for the ensuing year on the same remuneration. *Carried.*

Other business:—

Member to the Rubber Product Section Committee.—Proposed by Mr. G. Macpherson and seconded by Mr. R. M. Saywell 'That Mr. W. G. Craig be nominated as member on the Rubber Product Section Committee for the Mundakayam District.' *Carried.*

This Association approved of the Central Travancore Planters' Association's nomination of Mr. W. A. J. Milner on the Tea Product Section Committee.

INDIAN PLANTERS' ASSOCIATION, MYSORE.

Proceedings of the Forty-sixth Annual General Meeting of the Indian Planters' Association, Mysore, held at the Town Hall, Chikmagalur, on 29th June 1940

In the absence of the President, Mr. S. N. Ramanna presided.

1. 'This Association resolves to express its sense of profound sorrow at the untimely demise of His Highness Sir Sri Kanteerava Narasimharaja Wadiar, the late Yuvaraja of Mysore, and conveys its sincere condolences to the members of the Royal Family of Mysore and to H. H. Jayachamaraja Wadiar.' Moved from the Chair and *passed unanimously*, all members standing.

2. 'This Association learns with profound regret the news of the death of Messrs. Douglas Meppen, Yoganarasimha Iyengar and Dewan Bahadur S. L. Mathias, prominent Coffee Planters of this district.' *Passed*, all the members standing.

3. 'This Association resolves to convey its deep sense of loyalty to the person and throne of His Highness the Maharaja of Mysore and offers its cordial felicitations to Prince Jayachamaraja Wadiar on his being conferred the rank and status of the Yuvaraja of Mysore.' Mover:—Mr. S. N. Ramanna, B.A., LL.B. *Passed unanimously.*

'This Association heartily congratulates Mr. S. N. Ramanna, the representative of this Association on the District Board, Kadur District, on being re-elected as the President of the Board for another period of three years from 1st July 1940.' Mover:—Mr. Sylvester Pais. *Passed.*

4. *Confirmation of the proceedings of the last meeting held on 13th October* 1939. (Printed copies have already been circulated.) *Confirmed.*

5. *Election of an auditor to audit the accounts of the Association.*—It was resolved to request the auditor, who audits the accounts of the Chikmagalur Town Co-operative Society, to audit the accounts of this Association.

SECRETARIES' REPORT.

6. This 46th Annual General Meeting of the Association is being held under the grave shadow of a Great War raging in Europe, between Germany and the Allies. European democracies are on trial. We trust that England will not only win, but that, viewing matters from a post-war perspective will grant India the reliefs urgently required by the commercial communities in India, like a favourable rate of exchange, scrapping of the Ottawa Pact and generally pursuing policies in trade and commerce calculated to ensure that the primary producers of India (of whom the coffee planter is one) has a chance to survive.

In this connection it might be added that the members of this Association have generously responded to the call of the Mysore War Fund, and by purchasing benefit cinema and the lottery tickets arranged in this connection.

The Secretaries have great pleasure in reporting that the year 1939-40, was one of further activity in the annals of the Association.

The more important events are detailed herebelow:—

(*a*) Rajamantrapravina N. Madhava Rau, Member of Council and Chairman of the Indian Coffee Cess Committee, received a deputation of this Association and discussed all outstanding coffee problems. Later the member was entertained at a 'Coffee Party' by the Association.

(*b*) Problems peculiar to the coffee industry were discussed also with Rajamantrapravina K. V. Anantharaman, Second Member of Council when he visited Chikmagalur to preside over the Kadur District Conference.

(*c*) The Mysore Government, as a result of repeated representations, appointed a Committee to investigate into the present condition of the coffee industry, and nominated five members of this Association (Dharmapravartha M. L. Nagappa Setty, Messrs. S. N. Ramanna, T. B. Malle Gowda, G. S. Abdul Hamid, and Sylvester Pais) to serve on the said Committee. Ruken Ul-Mulk S. Abdul Wajid, Revenue Commissioner, presided. Some of the recommendations of the Committee have been accepted by the Government and orders have been passed thereon.

(*d*) The rules relating to the Coffee Takkavi Loan have been slightly relaxed by the Government. Further relaxations of the said rules are expected.

(*e*) The Mysore Coffee Curing Works in the establishment of which this Association took the keenest interest, commenced operations this year.

Sir Mirza M. Ismail, K.C.I.E., O.B.E., C.I.E., laid the foundation stone of the Coffee Curing Works and Rajamantrapravina N. Madhava Rau declared the same opened.

The Mysore Coffee Curing Works handled about 900 tons of coffee and it is likely that a dividend will be declared in the very first year (1939-40) of its working.

(*f*) The Deputy Commissioner Mr. E. V. Ganapathi Aiyar convened a conference of coffee planters at Chikmagalur and discussed with them the problems of the hour affecting the coffee industry in Mysore.

(*g*) The Mysore and the Madras Governments enacted legislation (1) to prohibit the adulteration of coffee with coffee husk, and (2) to prohibit the colouring of coffee.

(*h*) Mr. J. A. Saldhana delivered a very interesting lecture on Coffee to the meeting of this Association held on 13th October 1939.

Elections.—Mr. S. N. Ramanna was re-elected by this Association to the Kadur District Board (1940-43) and was re-elected by the Kadur District Board to be its president (40-43).

Mr. Sylvester Pais was elected by the I.C.C.C. to its Executive Committee (1940-41) and its Propaganda Sub-Committee 1940-41.

Mr. L. J. Mathias was elected as a member of the Advisory Committee of the Coffee Experimental Station, Balehonnur 1939-42.

Mr. S. N. Ramanna has been nominated by the Government to the Takkavi Loan Committee (1940-41) to represent this Association.

As usual, the Indian Coffee Cess Committee and the U.P.A.S.I. took a keen interest in coffee propaganda, coffee cultural, and coffee trade matters. The U.P.A.S.I. has been able to interest the Imperial Council of Agricultural Research to take up seriously in hand the control of thrips and marble disease which threaten the cardomom industry. Thanks to I.C.C.C. and the U.P.A.S.I., the British Empire Producers' Organisation and the London Board of the I.C.C. Committee have exerted a great deal to improve the lot of coffee in the European markets. The U.P.A.S.I. has taken keen interest in the introduction of Pyrethrum and Cinchona in the planting world. It is gratifying to note that the Government of Mysore appointed a Committee of officials and non-officials to go into the present condition of the cardamom industry and to recommend to Government the assistance required by them. Mr. T. Ramaiya, Deputy Commissioner, Hassan District, is the Chairman of the Committee. The recommendations of this Committee are eagerly awaited by the planters.

Mr. Sylvester Pais moved the following resolution in the Coffee Section of the U.P.A.S.I. relating to Indo-Government Trade talks:— 'Whereas it is extremely desirable and expedient that the trade interests of coffee should be adequately represented at the various trade talks of the Government of India,—especially the Indo-Ceylonese trade talks, the Indo-Japanese trade talks and any trade talks involving Indian coffee, this Committee of the U.P.A.S.I. hereby resolves to request the Government of India to appoint non-official advisers to present the case of coffee at such talks.

'And with this object in view, this Committee suggests the following panel for the Government of India to select their representations from:— Mr. F. E. James, Dr. F. X. Desouza, Mr. R. C. Morris, and Mr. W. K. M. Langley.'

This resolution was accepted by the house and forwarded to the Government of India, who have acknowledged the communication, adding that the views expressed have been noted.

A resolution moved by Mr. Sylvester Pais *re.* 'Control of Marine Insurance rates' in the U.P.A.S.I. meeting was lost.

The Indian Coffee Cess Committee gave some financial help to the United Coffee Planters, Chikmagalur, during 1939-40. It may be noted that originally this help was granted as a result of the endeavours of this Association.

The coffee curing houses at Chikmagalur and those at the coast continued to give the advantage of the rebate on coffee curing charges during the season 1939-40.

We are sorry to record the transfer of Mr. E. V. Ganapathi Iyer, Deputy Commissioner who was taking ceaseless interest in matters pertaining to this Association, to be Government Director, Industrial Concerns, Bangalore. The thanks of this Association are due to him for all that he has done for the coffee industry and to the planting world.

We feel certain that the new Deputy Commissioner, Mr. M. Mohamed Ismail Sheriff, with his youth, vigour and acumen will help the planting industry to the best of his ability.

The thanks of this Association are due to The *Mail*, The *Hindu*, and the local vernacular papers (The *Tainadu*, and *Vishvakarnataka* and *Deshabandhu* of Bangalore, and *Prabatha* of Mangalore) and their representatives for giving prominence to the proceedings of this Association.

Membership.—The membership was 168 as at 24-1-1940.

The names of members whose subscription was still in arrears in spite of repeated reminders were struck off as at 24-1-1940. As at date 1-7-40, there are on the roll 104 members.

Meetings.—During the year there were two general meetings and ten meetings of the Managing Committee.

As a measure of economy the Managing Committee directed the Secretaries not to convene a meeting of the General Body in February/May 1940.

Funds.—Closing balance for 1938-39 Rs. 290-11-1; 1939-40 Rs. 229-4-0.

The relationship between the office-bearers, and the members of the Association was friendly and cordial.

The thanks of this Association are due to the Chikmagalur Municipal Council for placing the Town Hall at its disposal for the conduct of the meetings.

S. ANNAPPA SETTY, } *Honorary*
SYLVESTER PAIS. } *Secretaries.*

The report was adopted. Printed copies were circulated.

7. 'In view of the fact that salaries and the establishment charges of the Chikmagalur Circle of the Mysore Agricultural Department are met out of the funds realised by the acreage cess on coffee estates, this Association requests the Government of His Highness the Maharaja of Mysore not to debit hereafter such expense to coffee cess funds, but to utilise the full funds available for coffee scientific research work.' Mover:—Mr. Sylvester Pais. *Passed unanimously.*

8. 'This Association requests the Government of Mysore to restore the privilege of returning a member from this Association to the Assembly on the ground that this Association represents an industry into which large capital has been sunk and to the Legislative Council in addition to the seat already allotted.' Mover:—Mr. S. N. Ramanna, B.A., LL.B. *Passed unanimously.*

9. 'On account of the extreme difficulty that the coolie traffic has been put to, this Association urges the Government to expedite the construction of waiting-sheds at the Mysore Frontier (near Kottigehar), Balehonnur and Mudigere.' Mover:—Mr. B. N. Hanumanthappa. *Passed unanimously.*

10. *Determining the salaries, commission and bonuses of maistries.* Mover:—Mr. T. B. Malle Gowda, M.L.C. 'The Association deems it inexpedient to interfere in the matter.'

11. 'The Government be requested to sanction financial help to coffee planters, as per the recommendations of the Coffee Inquiry Committee. The rate of interest is to be fixed at 4 per cent and the loan to be discharged in twenty instalments.' Mover:—Messrs. T. B. Malle Gowda and C. Syed Budan Saheb and others. *Passed.*

12. 'The coffee market be controlled and the rate of parchment coffee be fixed at Rs. 12 and native coffee at Rs. 10 per maund with the help of the Trade Commissioner of Mysore in London.' Mover:—Mr. T. B. Malle Gowda. The proposition was not considered to be feasible.

13. 'That the facilities of the Land Mortgage Bank be extended to the coffee industry also.' Mover:—Mr. C. Veere Gowda. *Passed unanimously.*

14. 'In the case of Debt Conciliation Boards, the Government of Mysore be requested to enlarge their power, enhance their discretion, and the term of repayment of debts be lengthened.' Mover:—Mr. C. Syed Budan Saheb. *Passed unanimously.*

15. 'While thanking the Government of Mysore for the sanction of Takkavi loans to coffee planters, this Association requests that spraying materials and fertilisers be also supplied on credit basis in addition to the coffee takkavi loan.' Mover.—Mr. L. J. Mathias. *Passed.*

16. (*a*) 'As it has been found that inordinate delay is caused in the issue of licenses for the removal of coffee husk (owned by the planter) to his estate from the curing house, this Association requests the Government to issue the license sought within three days of the presentation of the application, and (*b*) that no stamp be charged in the case of such applications.' Mover:—Mr. D. C. Rudrappa. *Passed unanimously.*

17. 'That the time granted by the Railway authorities at Kadur and Birur Railway stations to remove goods from the goodsyard be extended to one week in the case of coffee planters as a special case, as they live in places far away from railway stations.' Mover:—Mr. M. L. Gopala Setty. *Passed unanimously.*

18. 'The thanks of this Association be conveyed to Mr. E. V. Ganapathy Aiyar for all the services he has rendered to the coffee industry as the Deputy Commissioner, Kadur District.' Mover:—Mr. C. Syed Budan Saheb. *Passed unanimously.*

19. 'This Association learns with pleasure *re.* the appointment of Mr. Mohamed Ismail Sheriff as the Deputy Commissioner of Kadur District and extends to him a hearty welcome to the planting district.' Mover:—Mr. C. R. Nirvanappa Setty. *Passed unanimously.*

20. 'The Kadur District Tariff Board be approached to sanction a Town Motor Service to run within the Chikmagalur Municipal limits free of taxation for a period of five years to be leased out on a monopoly basis.' Mover:—Mr. B. N. Hanumanthappa. *Passed unanimously.*

21. *Election of Office-Bearers for* 1940-41.—Mr. S. N. Ramanna was elected President. Mr. B. N. Hanumanthappa was elected Vice-President. Mr. Sylvester Pais and Mr. Annappa Setty were elected Joint Hon. Secretaries. Messrs. M. L. Gopal Setty, N. K. Malle Gowda, C. Veere Gowda, C. R. Nirvanappa Setty, P. F. Naronha, S. Annappa Setty, C. Syed Budan Saheb, L. J. Mathias, Sylvester Pais, S. N. Ramanna, B. N. Hanumanthappa and G. S. Abdul Baseeth were elected as members of the Managing Committee.

22. 'The Indian Coffee Cess Committee be requested to publish the monthly circulars in Kannada also, as most of the planters living in Mysore and Coorg know Kannada only.' Mover:—Mr. D. C. Rudrappa. *Passed unanimously.*

23. 'This Association desires to place on record the valuable services rendered by Mr. Javale Ganesh Rao, as President of this Association for a term of three years.' Mover:—Mr. Sylvester Pais. *Passed.*

24. 'This Association recommends that the Mysore Government do contribute part of the war contributions in kind, coffee being one of the principal commodities so gifted.' Mover:—M. L. Gopal Setty. *Passed.*

25. 'The thanks of this Association be conveyed to Coffee Curing Houses for granting a rebate on coffee curing charges in the 1939-40 season.' Mover:—Mr. L. J. Mathias. *Passed.*

26. C. R. Nirvanappa Setty conveyed a vote of thanks to the office-bearers (1939-40).

27. With a vote of thanks to the Chair the meeting terminated.

S. ANNAPPA SETTY, } *Honorary*
SYLVESTER PAIS. } *Secretaries.*

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 20th July were:—

Rubber, including export licences ...	54.00 cents a lb.
Rubber Export Quota ...	13.00 cents a lb.
Rubber 1st quality ...	41.00 cents a lb.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

Income and Expenditure Account for the year ending 31st March, 1940.

EXPENDITURE	Rs.	A.	P.	Rs.	A.	P.
To Assistance Granted.—						
Case No.						
1. Allowance to widow ...	900	0	0			
2. Allowance to widow ...	150	0	0			
3. Allowance to widow ...	900	0	0			
4. Allowance to widow ...	600	0	0			
5. Destitute Planter ...	900	0	0			
6. Allowance to widow ...	600	0	0			
7. Education 1 girl, and allowance to Planter	500	0	0			
8. Allowance to widow ...	720	0	0			
9. Destitute Planter ...	250	0	0			
10. Destitute Planter ...	600	0	0			
11. Home education, 1 boy	335	15	1			
12. Home allowance to widow ...	1,208	7	5			
13. Home allowance to widow	698	0	8			
14. Allowance to widow ...	480	0	0			
15. Home education, 1 girl	614	3	7			
16. Home allowance to Destitute Planter ...	600	0	0			
17. Allowance to Destitute Planter ...	675	0	0			
18. Education 2 children	370	0	0			
19. Allowance to widow ...	320	0	0			
20. Destitute Planter ...	150	0	0			
21. Destitute Planter ...	150	0	0			
22. Allowance to widow ...	25	0	0	11,746	10	9
Current Expenses.—				96	15	3
Excess of income over expenditure transferred to Accumulated Fund account ...				7,747	15	4
				19,591	9	4

INCOME	Rs.	A.	P.	Rs.	A.	P.
By Subscriptions and Donations.—						
Anamallais ...	995	0	0			
Central Travancore ...	1,100	0	0			
Coorg ...	685	0	0			
Kanan Devans ...	760	0	0			
Mundakayam ...	350	0	0			
Malabar ...	10	0	0			
Mysore ...	1,235	0	0			
Nelliampathies ...	30	0	0			
Nilgiris ...	180	0	0			
Nilgiri-Wynaad ...	1,015	0	0			
South Travancore ...	320	0	0			
Wynaad ...	695	0	0			
Firms ...	265	0	0			
U.P.A.S.I. Staff ...	30	0	0			
Donations ...	2,863	4	3	10,533	4	3
Interest				5,201	12	1
Sundry Receipts				3,856	9	0
				19,591	9	4

COONOOR,
20th *June*, 1940.

A. G. ACASTER,
Secretary.

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sales Nos. 4, 5 and 6 were held on 9th, 16th and 23rd July, 1940.

DESCRIPTION	Season 1940-41				Average on same date	
	Sale No. 4	Sale No. 5	Sale No. 6	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	...	...	...	10 2	10 7	...
For Internal Consumption:—						
Leaf Teas ...	3 7	3 7	4 9	3 10	4 2	4 3
Dusts ...	5 2	5 1	4 11	4 11	4 1	4 10
Green Teas ...	5 11	5 9	6 2	6 1	5 3	...

RUBBER.—London Rubber on July 29, 1940, 12½*d.* (Paid and value).

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

Sales on
July 16 & 23, 1940

Incomplete Invoices.

Rubber

	Sale on July 18, 1940
Ribbed Smoked Sheet ...	55½
Contract Crepe ...	51½ to 52
Mottled Brown Latex Crepe	48 to 50
Brown Scrap Crepe ...	48 to 48½

The Madras Market

Current on 1st August, 1940

Little activity has been seen in the share market during the past fortnight, but considering the little interest that has been shown in giving buying support, shares have continued on the whole very steady. There appears little desire on the part of holders of planting shares to sell and shares that have come on the market are usually quickly absorbed. The feature of the period under review has been the Government's announcement to offer for conversion of the 5% 1940-43 repayable on the 1st October into 3% Defence Bonds repayable at Rs. 101 in 1946. These bonds which were limited to Rs. 15,000 in one holding have now been opened to holdings of unlimited amounts. The announcement was well received by the market, as further evidence of the Government's intention to maintain cheap funds and low rates of interest. The immediate effect on the market has been a pronounced firmness in all the Government loans and will bring the medium short-term loans to a basis of 3% yield and the longer dated loans to proportionate yield. 3½% Government of India Paper has advanced to Rs. 90-8 as., 60/70 to Rs. 104-4 as., and 45/55 to Rs. 109-12 as., and we expect to see further increases.

Rubber.—As advised in our last report the increase in the rubber Quota for the last six months of the year has had little effect on the market. Spot price continues to be quoted at over one shilling and the last quotation showed buyers at 12⅞*d.* The local price is about 43 cents for uncouponed rubber and 12 cents for the coupon. No further dividend announcements have appeared during the last fortnight. The market has been very dull but the undertone has been quite steady, though the turnover has been negligible. Cochin Malabars were reported at Rs. 6 cum dividend, Coorgs at Rs. 23-8 as. Business was done in Midlands at Rs. 3-13 as. to Rs. 3-14 as., and Cochin Rubbers at Rs. 12-4 as. Travancore Rubbers found buyers at Rs. 5-12 as. and Rs. 5-14 as. Thirumbadis had sellers at Re. 1-6 as. with no buyers.

Teas.—Buyers have been continually in the market for the leading scrips of South Indian estates but it has been very difficult to find sellers. Several dividend announcements have been made: Periakaramalais 7½% final making 17½% for the year on the increased capital of 50% over last year. In more active times no doubt the receipt of this news would have been in evidence in more activity in the shares. Chembra Peaks have declared a dividend of 5% the same as last year. The market has found this disappointing, more particularly as the accounts show that the earnings after provision for depreciation, etc., was nearly 20%. Business has been done during the week at prices ranging from Rs. 3 to Rs. 3-3 as. cum dividend and we think it likely that some reaction may be seen on this small disappointment and we advise our clients to buy on any fall, as there is no doubt, the balance sheet holds out excellent prospects for the future. Vellamalais were able to double their dividend to 5% from 2½% last year. Devon Teas and Balanoors have both declared the same dividend of 7½% and 7½% on the preference as last year. Transactions were reported in Highland Produce at Rs. 24 to Rs. 24-4 as., Periakaramalais Rs. 16-4 as. to Rs. 16-8 as. cum dividend. Nilgiri Neerugundis found buyers at 12 as., and Nonsuch Teas at Rs. 17-8 as. Peermades changed hands at Rs. 23.

FORTNIGHTLY RAINFALL STATEMENT

July 7, 1940 to July 20, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	10·14	7·56	50·81	68·51	25. Kotagiri ...	0·51	1·29	24·20	26·00
3. Kallar B'dge	11·00	5·29	61·31	77·60	26. Ootacamund...	0·24	1·55	23·41	25·20
4. Koney ...	11·46	5·75	54·55	71·76	27. Yercaud ...	1·60	1·24	23·95	26·79
8. Twyford ...	30·45	10·38	91·99	132·82	30. Devarshola T.E.S. ...	3·60	5·43	32·83	41·86
9. Pettimudi ...	40·29	20·95	129·67	190·91	31. Calicut ...	11·40	15·73	43·08	70·21
10. Kalaar ...	32·19	14·22	89·20	135·61	32. Kuttiyadi ...	11·47	16·65	36·22	64·34
11. Chittavurrai...	2·51	1·37	27·45	31·33	33. Vayitri ...	14·23	16·37	66·90	97·50
12. Bodi'kanur ...	0·96	0·43	8·67	10·06	34. Manantoddi...	3·92	12·27	46·65	62·84
13. Cochin ...	9·92	10·38	44·84	65·14	35. Bilgiris ...	2·79	1·80	26·81	31·40
14. Mooply ...	14·82	9·36	49·17	73·35	38. Pollibetta ...	2·90	4·83	32·97	40·70
15. Pachaimallai	16·26	9·07	52·91	78·24	39. Coovercolly ...	4·84	N.R.	35·21	40·05
16. Mudis ...	26·43	9·74	114·59	150·76	41. Kadamane ...	23·09	19·75	92·91	135·75
17. Pollachi ...	1·13	0·42	17·42	18·97	43. Merthisub'gey	8·11	11·15	44·53	63·79
18. Ropeway Waterfall ...	N.R.	N.R.	36·11	...	45. Balehonnur ...	7·87	10·74	41·21	59·82
21. Kerala Estate	16·32	18·13	72·80	107·25	46. Mangalore ...	3·19	19·53	37·63	60·35
22. Naduvattam	3·39	10·09	47·13	60·61	47. Madras ...	1·90	0·74	6·75	9·39
24. Coonoor ...	0·23	0·41	20·92	21·56					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor
'Glenview', Coonoor, Nilgiris

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EDITORIAL

The U.P.A.S.I. Annual General Meetings took place in the period 2nd to 9th August and provided as busy and successful a week as usual. A unique event this year was that members had the honour and pleasure of entertaining to lunch His Excellency Lord Linlithgow, Viceroy of India, accompanied by His Excellency the Hon. Sir Arthur Hope, Governor of Madras. The Viceroy was in the Nilgiris on holiday, and although there is never any real holiday for a man in his position, we may flatter ourselves that His Excellency did on this occasion enjoy himself, as an agriculturist amongst agriculturists. It is one of the first qualifications of a good Viceroy, and of a gentleman—and the Viceroy is both—that he should at least appear to enjoy himself at such functions, but it was clear that apart from more polite assurances the Viceroy was genuinely pleased to be amongst planters at this informal lunch.

The President, Mr. Francis, in a short and happy speech toasted His Excellency as 'our first planter Viceroy'. His Excellency replied at somewhat greater length, not in a set speech, but in a pleasant and informal talk. What he said was not reported, but two remarks which can be repeated here obviously aroused the enthusiasm of his audience, The Viceroy said that the planter's job was not as easy as it looked—and added feelingly that the same thing applied to his! Later, he referred to the fact that the planter sows his crop, tends it and always reaps something; a Viceroy however sows and tends, 'but God knows that he does not always reap'.

After the lunch various members, including the one Indian member present at the lunch, had the pleasure of a short talk with His Excellency.

The Conference was formally opened on 5th August by the new Governor of Madras, H.E. the Hon. Sir Arthur Hope, whose direct and forceful speech made a great impression on his audience. In particular, as the Viceroy had also done, he showed himself sympathetic towards the difficulties which face the planting industry, particularly Coffee, and promised careful consideration of and, even more important, a quick decision on the Association's request for a restoration to the pre-1938 figure of the Madras Government grant for scientific purposes. Visitors were entertained to tea on the lawn after the opening meeting by the President and Mrs. Francis.

Reports of the various meetings will appear in the next issue of the *Chronicle*. Mr. J. R. N. Pryde was elected President for the coming year, and the Association, always fortunate in the quality of the men it has found for this responsibility, can congratulate itself that in what may be a difficult year it will have as President one whose ability has been already proved and who can be relied upon to live up to the high standard set by his predecessors. The Tea, Coffee and Rubber Section Committees have elected Messrs. J. E. Sampson, Ivor Bull and J. E. Pitcairn respectively as their Chairmen, and the affairs of the Association for the coming year are in very good hands.

PERSONAL

The Editor takes this opportunity of bidding *au revoir* to readers of the *Chronicle*; he expects to be engaged in military service until the leading pest and the most important disease in world affairs today (need we name them) have been, not only brought under control, but let us hope completely eradicated. Col. Brock, as readers are aware, is returning to India to carry on the work of Secretary for the duration of the war and Mr. James has generously agreed to look after the office affairs in an honorary capacity during the period that elapses before Col. Brock's arrival. We would like here also personally to thank Mr. James for acting as Secretary when the Editor, in another capacity, stupidly took ill at the most awkward time of the year and missed two days of the meetings.

We're not going to make any prophecies about this war, except (*a*) that it's going to be an extremely unpleasant one and (*b*) that Britain's going to win it.

REPORT ON COMPARATIVE TRIALS WITH PERENOX CARRIED OUT AT BALEHONNUR AND SIDAPUR IN 1939-40

By W. Wilson Mayne, B.Sc., Chief Coffee Scientific Officer, U.P.A.S.I., Balehonnur.

In 1930 comparative trials to study the effectiveness of Perenox in controlling Coffee Leaf Disease (*Hemileia vastatrix*) were laid down at the Mysore Coffee Experiment Station, Balehonnur, and on an estate belonging to Messrs. Consolidated Coffee Estates, Ltd. The following report contains the results of these trials in terms of the disease intensity observed in the experiments laid down.

Methods.—The field experiments consisted of randomized blocks at both places. At Balehonnur six replications were used and there were three treatments consisting of Perenox at two strengths and 0.5% Bordeaux. At Sidapur, there were nine replications and three treatments consisting of Perenox, Fungex and 0.5% Bordeaux. At Balehonnur, the plot size was approximately 120 trees (8 rows of 15 trees). At Sidapur, the plots were rather more variable in plant number but were of a fixed area of one-tenth acre. At normal planting distance this should give about 120 trees.

The sprays were applied in May 1939 at both places. A second spray was given at Balehonnur in September to all the plots. At Sidapur, half of each plot was sprayed in September and the other half left unsprayed. Unfortunately, owing to a misunderstanding, the selection of the half plot for spraying was not made at random so that the data from the half plots to study the differences due to the number of applications cannot be examined statistically. The differences, however, were so large that statistical examination was quite unnecessary.

In order to estimate the effectiveness of the fungicides, the following technique was applied in both experiments in the last quarter of 1939. In each plot a random sample of 50 branches was taken. These 50 branches were selected on the following basis: they were shoots bearing 5-10 cropping nodes, which had not borne crop in any previous year. The number of nodes beyond the last crop bearing node, the number of leaves present at these nodes and the number of these leaves which showed Leaf Disease infection were recorded for each branch. It was found that number of nodes counted on 50 such branches was approximately constant in all plots. The leaves borne at these nodes may be considered as the leaves produced since the preceding December. The number of leaves counted expressed as a percentage of the total number of leaves produced since that time (=twice the number of nodes counted) gives a measure of the survival of leaf. The higher this percentage, the more leaves will have survived up to the date of observation. Any effect of the fungicide in checking disease attacks will be shown in a higher rate of leaf survival, or, if the differences are insufficient to show such effects, they may be revealed in a lower percentage infection calculated from the number of leaves and number of infected leaves counted.

Thus, two figures are obtained for each plot: a percentage survival of leaf and a percentage infection of the leaves present. In many cases, both these figures point in the same direction and they are then sufficient to decide whether a treatment is effective or not. In some cases, however, they may not indicate the same effects; for instance one treatment may show a high leaf survival rate with a high percentage of infected leaf, while a second treatment may show a lower survival rate but also a lower percentage of infected leaf. On a leaf survival basis, the first treatment would be presumed to be the better, whereas, considering the percentage infection alone, the second treatment might be much better than was indicated by the leaf survival. To deal with such cases, a third percentage is calculated in which allowance is made for infected leaf. The total leaf counted is divided into healthy leaf and infected leaf and the number of healthy leaves is added to half the number of diseased leaves and this figure is expressed as a percentage of the total number of leaves produced (= twice the number of nodes counted). This figure is called the effective leaf survival, since a diseased leaf is obviously of less use to the plant than a healthy leaf.

In the experiment at Sidapur a further series of observations were made in March 1940. The type of branch used at this time was one of 7 or 8 joints about to bear crop for the first time. It has been found that such branches represent a very common type of branch which can be found with ease on almost any adult plant. The number of nodes (7 or 8) was recorded as well as the number of leaves and the number of diseased leaves. Calculations of the percentage survival, percentage infection and percentage effective survival were carried out in the same manner as for the earlier observations. In this case, 25 branches were counted in each half plot, and for the purposes of studying the fungicides the data were combined.

It may be said in passing that this type of observation has proved its value in other work and there is no doubt that it affords a very sensitive method of assessing disease severity.

Results.—The following were the results obtained at Balehonnur. The observations in this experiment were carried out on the 21st and 22nd November 1939:—

			Leaf Survival	Infection
Perenox ...	3⅓ lbs. in 100 gals. ...	33%	53·2%	75·8%
Perenox ...	1¼ lb. in 100 gals. ...	125%	50·7%	84·1%
Bordeaux ...	2-2-40		61·4%	61·7%

Significant differences:—

Leaf survival ...	4·24%
Infection ...	8·73%

These results indicate a superiority of the 2-2-40 Bordeaux over the Perenox at both strengths, the differences being highly significant. As far as the Perenox is concerned, there is no significant difference betwen the two strengths either for leaf survival or for percentage infection although the latter difference approaches significance.

The calculation of the effective leaf survival gave the following figures:—

		Effective Leaf Survival
Perenox ...	3⅓ lbs. in 100 gals.	33·1 %
Perenox ...	1¼ lb. in 100 gals.	29·6 %
Bordeaux ...	2-2-40	42·3 %
Significant difference	... 3·62%	

The difference between the two strengths of Perenox still approaches but does not quite reach statistical significance.

The conclusion suggested by this experiment is that Perenox at neither strength offers a real substitute for the usual Bordeaux mixture.

No further records were possible from this experiment as the area was uprooted in the hot weather as part of a replanting programme.

The results obtained in the experiment at Sidapur on the estate of Messrs. Consolidated Coffee Estates, Ltd., are given in the following table. The first series of observations were done in September.

			Leaf Survival	Infection
Perenox	... 3¼ lbs. in 100 gals.	...	62·3%	22·8%
Bordeaux	... 2–2–40	...	64·3%	31·7%
Fungex	... 1 lb. in 40 gals.	...	59·2%	57·6%

Significant differences:—

Leaf survival	... 3·03%
Infection	... 8·76%

In this series, there is no doubt of the unsatisfactory control exerted by Fungex but the difference between the Bordeaux and the Perenox is not significant for Leaf Survival and only just so for percentage infection and this difference favours the Perenox. In this experiment, the results suggest a slight superiority of the Perenox. This superiority is not maintained when the data for effective leaf survival are calculated, as is shown by the following figures:—

				Effective Leaf Survival
Perenox	... 3¼ lbs. in 100 gals.	...	...	55·1%
Bordeaux	... 2–2–40	...	...	54·0%
Fungex	... 1 lb. in 40 gals.	...	...	42·4%
Significant difference		... 4·08%		

A further series of observations were carried out in April 1940. As has been previously pointed out, half of each plot was left unsprayed in September but owing to the fact that the position of the unsprayed half was not chosen at random, the half plot data cannot be legitimately subjected to analysis. The half plot data are given in the following table. For the comparison of the fungicides, the sum of the values for each pair of half plots were used in the analysis, while the results are given in the second table as the mean values for the pair of half plots.

		Half plot sprayed twice		Half plot sprayed once	
		Leaf Survival	Infection	Leaf Survival	Infection
Perenox	...	42·4%	30·4%	29·3%	43·1%
Bordeaux	...	35·6%	39·9%	25·5%	51·1%
Fungex	...	25·0%	54·9%	21·3%	55·3%

Although these figures do not permit of legitimate statistical examination, there can be little doubt of the advantage of the second spray with the first two fungicides. An inspection of the plots makes this very clear, the twice sprayed strips standing out in a most striking manner.

Turning to the comparison of the fungicides, the data in the following table illustrate that the superiority of the Perenox in this experiment which was suggested by the September data is still more evident in these observations.

			Leaf Survival	Infection
Perenox	... 3¼ lbs. in 100 gals.	...	35·8%	36·7%
Bordeaux	... 2–2–40	...	30·5%	45·5%
Fungex	... 1 lb. in 40 gals.	...	23·1%	55·1%

Significant difference:—

Leaf Survival	... 2·55%
Infection	... 6·82%

It can be seen that differences are significant in every case. The Perenox plots have a higher leaf survival and a lower percentage infection than the Bordeaux plots. It is clear that Fungex is of no value as a fungicide against Coffee Leaf Disease.

General remarks.—The results of the two experiments are conflicting and it is difficult to draw any definite conclusions as to the exact position of Perenox relative to the 2-2-40 Bordeaux until further results are obtained.

While any explanation of the differences between the two experiments must be tentative, the following points may have a bearing on the situation. The rainfall conditions at Balehonnur in the S.-W. monsoon are heavier than at Sidapur and it seems possible that disease attacks were earlier in development at the former site than at the latter. This cannot be stated with certainty since the observations on disease severity were made at different times after the S.-W. monsoon. Further the relative superiority of the Perenox over the Bordeaux is much more marked in the second series of observations at Sidapur than in the first. This suggests that the Perenox is perhaps less efficient under conditions of heavy continuous rainfall than it is during drier seasons or in drier localities.

Further experiments are in progress to collect more information on the usefulness of this fungicide, relative to the commonly used Bordeaux mixture.

Grateful acknowledgments are due to the Staff of the Mysore State Coffee Experiment Station, who carried out the spraying at Balehonnur, to the General Manager of the Consolidated Coffee Estates, Ltd., for facilities for carrying out the trial at Sidapur, and to my assistant Mr. V. K. Subramanyam, who supervised the spraying and collected all the observational data at Sidapur.

AUSTRALIAN GOVERNMENT TRADE COMMISSIONER

We publish below for the information of members a letter dated 5th July received by the Madras Chamber of Commerce from Mr. H. Roy Gollan, the Australian Government Trade Commissioner, Calcutta:—

'I have the honour to inform you that an office of the Australian Government Trade Commissioner Service has been opened for India and that I have assumed the duties of Australian Government Trade Commissioner as from July 1.

'The office is located at 2, Fairlie Place, Calcutta, whence it will be a pleasure to assist with information concerning Australia and its products.'

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 4th August were:—

Rubber, including export licenses ...	55.00 cents a lb.
Rubber Export Quota	10.50 cents a lb.
1st quality rubber alone ...	45.00 cents a lb.

RUBBER LATEX

COAGULATION WITH SULPHURIC ACID

By Dr. K. L. Moudgill, M.A. (Cantab.), D.Sc. (Glas.), F.I.C., Director of Research, University of Travancore, and Dr. P. V. Nair, B.A., M.Sc. (Luc.), D.Phil. (Oxon), F.C.S., Industrial Chemist, University of Travancore.

(Contribution from the Central Research Institute, University of Travancore.)

Rubber latex can be coagulated with the help of a large number of chemicals amongst which acids are the most well known. Formerly acetic acid was popular with the planters, but latterly it has been displaced by formic acid which, weight for weight, coagulates larger quantities of the latex. Sulphuric acid, which is cheaper than both these acids, has also been used; but it is not popular for the following reasons:—

1. It is hygroscopic and readily absorbs moisture from air. The strength varies from time to time and, therefore, unless laboratory control and service are available, the proportions to be used have to vary with the varying strength of the stock of strong sulphuric acid.
2. The concentrated acid is highly corrosive and, till it is adequately diluted, it has to be handled with very great care.
3. When strong sulphuric acid is added to water, much heat is produced and the liquid may spurt or 'boil' out violently.
4. Unless the sulphuric acid is sufficiently dilute and the coagulum is washed prior to pressing, it may gradually attack the rollers.

As the cost due to the coagulant is not ordinarily of material importance, formic acid has been preferred even though it is more costly. Some years ago, when the price of raw rubber was low, the incidence of cost due to the coagulant became a factor for consideration and in many estates in Malaya and in some estates in India, sulphuric acid was used. The practice was abandoned when the prices of rubber rose and at the same time the price of alternative coagulants came down. With the outbreak of the present war, the prices for acetic acid and formic acid rose very high. Several enquiries were received in the Department of Research for a substitute and experiments were undertaken with a view to find out the conditions under which sulphuric acid and other cheap coagulants could be used in plantation practice without radical change in the process. The coagulation experiments were carried out in the Gokul Estate belonging to Mr. R. Ananda Rao and the Bharatan Hills Estate belonging to Mr. M. K. Nilakanta Iyer.

Proportion of Acid to Latex.—For each coagulant, there is a range of optimum proportion of acid to the dry rubber content of the latex. This range in the case of sulphuric acid is narrower than with formic acid and, therefore, the proportions have to be watched carefully. One lb. of sulphuric acid can coagulate between 160 to 240 pounds of rubber. While in the case of formic acid, excess of the acid may not introduce any defect in the coagulated rubber, excess of sulphuric acid makes the produce sticky and difficult to roll. If, however, the proportions are properly maintained, the product obtained is as good as that obtained with formic acid.

Dilution of Sulphuric Acid.—Sulphuric acid is sold in many concentrations and degrees of purity. It has been found that the commercial variety known as commercial oil of vitriol gives just as satisfactory results as the more expensive pure chemical. The density of the commercial acid (C.O.V.) is generally stated to be 1.84; but owing to dilution by the absorption of water, it is often found to be lower. Even so, oil of vitriol will cause serious burns, if it comes in contact with the skin. It mixes with water in all proportions, but the dilution must be carried out with special care, as very considerable heat is produced when strong acid and water are mixed. The acid should always be poured into the water and the water should never be poured into the strong acid. Dilution of one part of acid with four parts of water gives a fairly safe mixture but, as has been stated before, the strength of the original acid being liable to fluctuations, the concentration of the resulting solution cannot be depended upon and consistent results cannot be obtained unless there is proper chemical checking of the strength by titration. One ounce of this solution can be used with a dry rubber content of five pounds.

Precautions.—The method of coagulation with sulphuric acid does not vary from the usual plantation practice and the period of coagulation is the same. It may be noted, however, that with sulphuric acid, coagulation is more complete than with formic acid or acetic acid and, therefore, the residual serum will be clearer. The coagulated rubber should be washed before it is put into the rollers irrespective of the coagulant. It is, however, found that this washing is not done in all the estates. When sulphuric acid has been used, it is necessary that serum should be pressed out before the coagulated rubber is taken out of the tray. The coagulum should then be washed thoroughly with water before pressing and the rollers also should be occasionally flushed with water. After the pressing operations for the day have been completed, the roller should again be washed thoroughly with water. This additional precaution should be taken, no matter what coagulant has been used; but with sulphuric acid it is more necessary than with other acids, because sulphuric acid is less volatile and does not evaporate off as readily as acetic acid or formic acid does.

Effect on the Trays.—Sulphuric acid is more energetic in its action than formic acid; but the quantity that is required for each tray is so small and the dilution in which it is used (we must take into account not only the water added to the acid but also the water content of the latex) is so great that even after contact with aluminium for 12 hours, no traces of aluminium were found in the serum. Enamel trays, provided that the enamel is not broken anywhere, will not be acted upon by even the commercial oil of vitriol. Aluminium trays or trays made from galvanised iron sheets (kerosene tins) can also be used without risk, provided that the latex is first poured into the tray and only the diluted acid is added to the latex.

The pressed sheet can be drained, dried and smoked in the usual way.

Should the coagulum show any tendency to stick in rolling, it may be concluded that the dosage of sulphuric acid has to be diminished. Experienced operators can adjust these differences with a little practice. It may be stated that while more exact measurements are required with sulphuric acid, this additional care will prevent wastage of coagulant. Excess of coagulant is not detected so readily in the case of formic acid and acetic acid and wastage frequently occurs without detection.

Supply.—The sudden rise in the prices of the common coagulants during November and December, 1939, should be a warning to the rubber planter. Both acetic acid and formic acid are imported from abroad. Apart from the fact that many important sources of former supply are in the hands of the enemy countries, difficulties of transport from Europe, America and Japan may again create a difficult situation. Sulphuric acid is an essential article of commerce. It is manufactured in several places in India and its use is very extensive in many vital operations. There is thus a greater likelihood of the supplies of this key chemical being maintained in spite of the war handicaps.

As the dilution of sulphuric acid and the maintenance of correct proportions are the only points which may lead to unsatisfactory results, arrangements have been made with The Travancore Sugars & Chemicals, Ltd., Trivandrum, to prepare for the market a standard solution of the acid under a special name 'Sulpholex' which does not alter on keeping and can be handled with safety. One fluid oz. of Sulpholex should be diluted to five ounces and each ounce of this diluted acid is sufficient to coagulate latex with a dry rubber content of one pound.

Other Coagulants.—Experiments have been conducted with a large variety of other coagulants. Certain mineral salts such as aluminium sulphate, potassium sulphate etc., either alone or in admixture with mineral acids, and free mineral acids have been tried. It is possible to coagulate rubber latex with organic acids obtainable from tamarind, various types of limes and other acid-containing fruits. Vinegar, which is only a weak solution of acetic acid, can also be used. With regard to the vegetable products it has to be observed that the concentration is not uniform and the juices contain colouring matter and other impurities which are taken up by the coagulated rubber and interfere in the production of rubber of standard quality.

Conclusion.—Further experiments on coagulation are in progress. The planters are invited to write to the authors, if they wish to make any enquiries. They are advised to try the use of Sulpholex, even if they have, for the present, sufficient stock of other coagulants. The authors will be glad to know the results and to tender advice, when necessary, if they are approached. They would acknowledge with thanks the valuable help rendered by the owners of the Gokul Estate and the Bharatan Hills Estate in the work described in this paper.

WAR AND WORLD ECONOMIC TENDENCIES

The March number of the *Monthly Bulletin of Statistics* of the League of Nations gives a vivid picture of the effects of war on world economic tendencies in various fields of economic activities in the first four months of war. Industrial production was generally higher during the period, as compared with the corresponding period of the previous year. There were increases in a number of instances in both imports and exports. Savings deposits in most European countries appear to have been adversely affected by the war; in several countries outside Europe, however, such showed an increase. Prices of Government bonds and industrial shares in a number of countries such as Canada, the United States and Switzerland showed contrary movements in the latter part of 1939; at the beginning of the European war, share prices rose in these countries, while Government bonds suffered a heavy decline. Subsequently, a reaction occurred in share prices while bonds recovered.

Wholesale prices in the United States dropped slightly in February 1940, after having remained stable since September of last year. In the United Kingdom, the price rise seems to have flattened out. Also in the Netherlands and Switzerland, the rise has slowed down in recent months.

Industrial production in the last four months of 1939 was higher than in the corresponding months of 1938; in the United States by 23%, in Canada and Norway by 11%, in Sweden by 10%, in Denmark and Belgium by 6%, in Estonia by 2%, and in Bulgaria by 1%. In Roumania, it was at about the same level. It shrunk in Latvia by 10% and in Chile by 2%.

—*Industrial Bulletin.*

COFFEE SCIENTIFIC DEPARTMENT

Quarterly Progress Report of the Coffee Scientific Officer, U.P.A.S.I., for the period April to June 1940.

The following report comprises notes on work in progress during the quarter ending 30th June 1940.

Hemileia Vastatrix.—Fresh isolations of this fungus were made during the quarter and one single spore isolation was maintained from the preceding year. These isolations are preliminary to further testing work on disease resistance.

Tree Observations.—The detailed observations on 8 trees were carried out between the blossom shower and the blossom and again in early June. A good deal of time during the quarter was occupied with the analysis of the accumulated data.

Spraying Work.—No further work is available for report but the sprays in the experiment on nozzle size and spray volume were carried out during the quarter.

Other Work.—The manures were applied in the private estate manurial trial last quarter.

A short tour was made in Coorg during April-May. Arrangements were made for the laying out of an experiment on reduced strengths of Bordeaux mixture. The work going on in South Coorg was inspected and a further programme for investigations on borer and supply establishment was drawn up with the assistant.

Seasonal Conditions.—The blossom showers at the Experimental Station were delayed until the third week in April and were heavy. This was the latest blossom shower in the history of the Station. In other areas small showers were experienced about the 10th April but in most localities the blossom shower was as late as at the Station. A considerable amount of rain was experienced in many areas at blossoming time. Subsequent rains in April and May were generally adequate. The monsoon set in vigorously in the second half of June accompanied by heavy rain and high wind. Reports of heavy failure of crop have been received from many areas, although detailed observations at the Station do not indicate any marked abnormality up to the end of the quarter. The heavy rain about the blossom time may have caused poorer setting than usual, but no definite conclusion as to final setting is possible until after the later fruit fall, which had not occurred at the Station up to the end of the quarter.

No new diseases or pests were reported during the quarter. The indications are that borer removals will again be heavy in spite of the wet N.-E. monsoon of 1939. It must be remembered that the favourable conditions for borer in previous years must have resulted in very high emergences in October and November 1939 so that large numbers of eggs would have been laid in spite of the unfavourable weather. Local reports of damage by the spotted locust have been received during the quarter. During the tour in Coorg a considerable amount of injury to *Dadap* (*Erythrina lithisperma*) by the gall eelworm (*Heterodera marioni*) was noted. The infestation of roots was very heavy.

Work of the Assistant.—The assistant commenced a series of observations on fruit setting in Robusta, using crop branches on a number of trees in the block in which individual yields are being recorded. These observations were made at weekly intervals from the blossom.

The spraying experiment on reduced strength of mixture was carried out on a private estate under his supervision. An experiment with Perenox was also carried out.

A new experiment to study methods of improving establishment of supplies was designed after a detailed inspection of a block of coffee being replanted in an estate in Coorg. The collection and study of mealy bugs associated with coffee was also taken up both in the field and the laboratory.

The following article was published during the quarter:—Coffee Spraying.

An article on borer by the Assistant Scientific Officer and a report on Perenox trials were completed and submitted for publication. The annual report was also prepared during the quarter.

The Scientific Officer was on leave for three weeks during the quarter.

W. Wilson Mayne,
U.P.A.S.I. Coffee Scientific Officer.

DISTRICT NOTES

MYSORE

Proceedings of the Quarterly Extraordinary General Meeting of the Mysore Planters' Association (Incorporated) held at the Kadur Club, Chikmagalur, on Friday, 28th June, 1940.

Present.

Messrs. A. Middleton (*Chairman*), H. Browne, F. Cannan, M. D'Souza, G. V. R. Frend, J. F. Graham, St. John Hunt, L. P. Kent, N. Kirwan, H. S. Northey and A. L. Hill (*Secretary*).

Visitors.—Messrs. W. W. Mayne and K. S. Nagesha Rao.

The Secretary read the notice calling the meeting.

Before proceeding with the business of the meeting the Chairman requested all present to stand and spoke as follows:—

Gentlemen, I regret to have to report the death of three planters since our last meeting.

Mr. Owen Scot-Skirving died at home on 26th March. He came out to Koppa in 1876 and opened Yellagode Estate, where he lived till 1915. He was a staunch supporter of the N.M.P.A. from its inception in 1880 till 1922, serving on the Committee and as President and also as Vice-President of the U.P.A.S.I. in 1903-1904, and a delegate in 1907. He was also a delegate to the Representative Assembly.

He was a great sportsman and shot over thirty tigers, and as a horseman was considered the best gentleman rider in South India in his day.

I regret that we know of no relatives to whom we can send our condolences.

Dewan Bahadur S. L. Mathias died in Mangalore on May 10th aged 72. He joined the N.M.P.A. in the nineties and remained a member until 1924 when the three Mysore Associations were amalgamated. He was elected a member of the M.P.A. in 1926 and remained a member till his death. He developed large coffee and tea interests in Mysore, as well as land in South Kanara. Well known for his public-spiritedness, he assisted the Association particularly over the improvement of communications with Mangalore serving on several deputations.

In South Kanara he was an honorary magistrate, and served on Taluk and District Boards, and was given the title of Dewan Bahadur and the Silver Jubilee Medal, and in Mysore the Public Services Gold Medal in recognition of his work.

Always most charitable, the Pope conferred on him the Knighthood of St. Gregory the Great in recognition of same. I shall ask the Secretary to convey our sincere condolences to his family at their great loss.

Mr. Douglas Meppen died on the 19th instant in the Sanderson Memorial Ward at the age of 90. When a student at Heidelberg University he served as a stretcher-bearer in the Franco-Prussian War, coming to India afterwards in 1871 to the Mysore Coffee Company at Goomankhan, I believe, and since then he has worked on many other estates, and was at times a member of the B.P.A. and the M.P.A., and some time ago the Mysore Government employed him as Economic Superintendent. In his time he was a good shot and shikari, a great linguist, and credited with having walked great distances even in his old age, the stamina for which he attributed to his temperate habits.

Kadur District has lost a landmark and encyclopædia of local information, and I shall ask the Secretary to communicate our sympathy and regret to his brother, Mr. F. D. Meppen.

Confirmation of the Minutes of the Last Meeting.—The Minutes, with the exception of the *In Committee* parts, had been printed in *The Planters' Chronicle* and the *Chronicle* had made minor errors in printing them. Corrections to the printed minutes were published in two issues of *The Planters' Chronicle.*

It was proposed from the Chair and carried 'that the Minutes of the last meeting be taken as read and confirmed'.

REPORT OF THE EXECUTIVE COMMITTEE FOR THE PERIOD 1ST MARCH TO 31ST MAY 1940.

The draft Report had been circulated to all members of the Association and had since been signed by all Active Members of the Executive Committee without alteration and therefore now became the Report.

The Report reads as follows:—

Meetings.—The Seventy-sixth Annual General Meeting was held on 21st March 1940.

References.—Forty-three references and circulars have been sent to the Executive Committee of which 40 have been dealt with and three remain to be finally disposed of.

S.I.P.B. Fund.—Your Committee have recommended the continuation of grants for six months to two nominees of this Association.

Prevention of Adulteration Act.—The Government have published draft amendments and additions to Rule 6 fixing the standards of purity prescribed for coffee and tea. That concerning Tea was sent to all Tea Members of the Association asking if they had any objections to it. No replies were received. That covering coffee was referred to the Indian Coffee Cess Committee.

Hassan and Kadur District Boards.—Mr. E. H. Young and Mr. M. D'Souza, the Association's candidates to the Hassan and Kadur District Boards respectively, have been declared elected.

Subscriptions 1940.—Twenty-three members paid their subscriptions on demand, 11 after the first reminder, six after the second reminder, and one after the third reminder leaving two members who have not as yet paid their subscriptions in spite of a demand and three reminders.

S.I.P.B. Fund Subscriptions 1940-41.—Twenty-two members have paid their subscriptions for 1940-41 in advance and three on demand leaving three members who have not yet paid them and one member who has not paid his subscription for three years.

Circulars.—Seven circulars dealing with the Executive Committee's Annual Report 1939 and Quarterly Report for December 1939 to February 1940, the Kadur District Board, Ammonium Sulphate, Workmen's Compensation—Report of Fatal Accidents, Cultivation of Pyrethrum, Mysore

Motor Vehicles Rules, Income Tax in British India and Enquiry for cardamom seedlings, have been sent to all members and 12 circulars dealing with the maximum price for Kerosene Oil in Hassan District, closing the Arehalli-Cheekanhalli Road for all vehicular traffic, opening of shandies at Balehonnur and Bukkambudi, prohibition of sale of coffee husk unless it is rendered unfit for human consumption by composting, small change in Treasuries, terms offered by Messrs. Peirce, Leslie & Co., Ltd., to planters in their employ called up for War Service, closing of the Bankal Shandy due to cholera, free shooting of tigers within a radius of three miles round about Aramane Thalagur Village in Balur Hobli, tea to Egypt, new rule prescribing standard of purity of tea under the Mysore Prevention of Adulteration Act, Mysore State War Relief Fund—Hassan District, and an enquiry for Tea, have been sent to those members interested.

A. MIDDLETON	*Chairman.*
R. C. LAKE H. BROWNE J. H. ALEXANDER	*Members.*

It was proposed from the Chair and carried unanimously 'that the Report be taken as read and adopted'.

Business Arising out of the Report.—

Subscriptions Outstanding.—The Secretary reported that two members had not yet paid their subscriptions to the M.P.A. and that four S.I.P.B. Fund subscriptions, one of which was in arrears for three years, were outstanding. It was decided to leave the matter to the Executive Committee to deal with.

REPORTS OF MEMBERS, THE LEGISLATIVE COUNCIL AND THE REPRESENTATIVE ASSEMBLY

(*a*) *The Legislative Council.*—The Secretary reported that there had been no session of the Council since the last meeting and that Mr. Morris had resigned his seat on being called up for Military Service. As Government had not nominated anyone in his place the Association was not represented at the session of the Council now in progress.

(*b*) *The Representative Assembly.*—Mr. Middleton gave a full report on the Budget Session of the Mysore Representative Assembly and this was received with applause.

REPORTS OF MEMBERS, THE HASSAN AND THE KADUR DISTRICT BOARDS

(*a*) *Hassan District Board.*—The Secretary reported that Mr. Young had informed him that he had attended the first meeting of the new Board and that the Independent Party candidate had been elected President by a majority of two votes.

(*b*) *Kadur District Board.*—The Secretary reported that no report had been received from Mr. Homewood. The Chairman requested Mr. D'Souza to give a report. This Mr. D'Souza very kindly did.

Mr. D'Souza then gave a report on the special meeting of the reconstituted Board held on 14th June 1940.

REPORT OF THE M.P.A. REPRESENTATIVE TO THE U.P.A.S.I. BUDGET MEETINGS

Mr. Kirwan reported as follows:—

Mr. Chairman and Gentlemen, I duly attended the U.P.A.S.I. Meetings held in Coonoor on April 6th-9th.

Labour Department General Meetings.—This consisted of reading the Chairman's speech and passing the budget. The meeting lasted seven minutes. The impression I received in and around the meeting was that the interests of Mysore members were likely to suffer from the lack of interest of the members concerned. Your representative, Mr. Humphreys, was doing all he could but receiving very little support from the Mysore members. If members take no active interest in their own affairs it seems hardly reasonable to expect their representative to do anything for them. When the Labour Department was formed originally it was agreed that spheres of influence in recruiting labour should be recognised. That areas already recruited by definite interests should be reserved to those interests. In this way South Kanara was supposed to be reserved for Mysore and Coorg and one or two other districts to a limited extent, in proportion to the amount of labour they already recruited in that area. As the membership from Mysore and Coorg is now heavily reduced it can hardly be expected that this area should be reserved for them by the Labour Department. This may react unfavourably in the future should labour shortage again occur.

I understand that members consider there is too little done for them in South Kanara. The Labour Department are more than willing to increase the Department's staff in South Kanara if more members support it.

Coffee Product Section.—There were two meetings of the Coffee Section Committee at which a lot of work was got through. We are lucky in having a Chairman who pushes matters through and does not allow discussions to drag.

The proceedings have been reported.

I was instructed to bring forward the matter of the rise in cost of Quinine. The meeting supported the suggestion and the question was put before the Executive Committee for action should occasion rise.

Cardamom Research Scheme.—Mr. Gallaher attended this meeting. Notice has now been received that sanction is likely to be accorded earlier than was at one time expected and an answer may be received next month at the latest.

General Meeting of the U.P.A.S.I.—Your Secretary spotted a serious drafting error in the proposed amendment to the Articles of Association which in effect practically prohibited any member of this Association from being placed on a Product Committee. The amendment proposed by him was accepted by the Executive Committee and the rule as put before the meeting amended accordingly. We are much indebted to Mr. Hill for putting this matter right: it would have led to trouble later.

The meeting has been fully reported in the *Chronicle.*

N. KIRWAN.

A vote of thanks to Mr. Kirwan was put from the Chair and carried unanimously.

Nomination of Members to the Coffee Section Committee.—The Chairman of the Coffee Product Section Committee having very kindly arranged that nominations from the Association to the Coffee Section Committee should be received even though somewhat late this matter was with the permission of the meeting taken up. It was decided to nominate Mr. N. Kirwan, who very kindly agreed to act, and Mr. E. H. Young, or failing him Mr. R. C. Lake, for the two Mysore seats, and Mr. Sylvester Pais for the general seat.

Labour Department.—With the permission of the meeting this item was taken up next.

Labour Department Bye-Laws.—The new Labour Department Bye-Laws were discussed and approved of and the Secretary was instructed to inform Mr. Humphreys accordingly.

U.P.A.S.I. Labour Policy and Procedure.—This was dealt with *In Committee.*

Cardamom Scientific Research.—Read a letter dated 15th June 1940 from Mr. Gallaher.

Mr. Mayne said that he hoped that the cardamom survey would start in September and be finished by December if not earlier. During that time he would be almost wholly occupied on the survey.

It was decided that the Association favoured a Sub-Committee of the U.P.A.S.I. Executive Committee to deal with cardamom scientific work and that it would like to be represented thereon by Mr. Gallaher.

Southern India Planters' Benevolent Fund.—Read circular No. BF-2 of 8th May and approved of the resolution to be moved to omit the word 'unanimous' from Rule 22.

Read circular No. BF-2 of 3rd June 1940 regarding arrears of subscription and re-admission to membership.

Planting Cinchona.—The Chairman said that some time ago he had been to Kadamane to see the trees supposed to be hybrids planted by him there but found that but few were left. Mr. Mayne had very kindly let him have a copy of Mr. Wilson's Report on Cinchona which he had left at Kadamane. The report of the Sub-Committee had not been completed. He also informed the meeting that he had met the Deputy Director of Agriculture who had informed him that Government were preparing to supply seedlings to anybody who wants to plant them. The subject was left to the Sub-Committee to deal with.

Constitutional Reforms.—The Secretary reported that the Association had not been made the constituency for the European Planting seats in either the Representative Assembly or the Legislative Council. According to the Representative Assembly Rules 1940 and the Legislative Council Rules 1940 owners of 20 and 50 acres of land assessed to coffee assessment were qualified to be voters and candidates. He had asked the Law Secretary for a ruling as to whether corporations and partnerships were entitled to vote and a ruling to the effect that they were not allowed to vote had been received. This meant that only some 14 persons were entitled to vote. He therefore made out a case for the inclusion of companies and firms in the voters' lists and for their managers or superintendents to vote and sent it to the Chairman who was attending a session of the Representative Assembly in Mysore. The Government had since issued new rules based on the Assam Rules enabling superintendents and managers of estates to vote and these were comparatively satisfactory. He had sent circulars to members of the Association who had not been included in the published Electoral Rolls and to those whose names appeared incorrectly asking them to apply to the Deputy Commissioners of their respective districts before 3 p.m. on 28th June 1940 for the inclusion or correction of their names.

The Chairman said that on going through the amended Rules he found that no provision had been made for the inclusion in the rolls of managers and superintendents of estates belonging to individuals. So he had written to the Law Secretary requesting him to make the necessary alterations in the Rules. He gave Government's reasons for not making the M.P.A. the constituency for the European Planting Seats.

Mr. Kirwan said that the thanks of the Association were due to the Chairman and Secretary for all they had done.

Relief to Coffee Planters in the State.—Read and recorded Government Order No. R. 6430-42-L.R. 97-39-26 of 8th May 1940 about relief to coffee planters in the State.

War Relief Funds—U.P.A.S.I. and Mysore State.—The Chairman commended the U.P.A.S.I. War Fund to members particularly as 25% of it would be retained for the relief of planters or their dependents who might suffer from war service. The Secretary was instructed to draw members' attention to this.

The Secretary reported the action taken in Hassan District for the Mysore War Relief Fund and asked if similar action was being taken in the Kadur District. No member had any information. It was decided that the Secretary should send a circular out in the Kadur District asking for subscriptions to the Mysore War Relief Fund as had been done in the Hassan District and that subscriptions collected should be credited through the Kadur District. Mr. D'Souza very kindly offered to bring the matter before the Kadur District Board.

The Secretary drew attention to the appeal received through the Secretary to the Mysore War Relief Fund for books and magazines for the Sea War Library Service serving the Navy and the Mercantile Marine, and suggested that they should be sent to the Kadur Club whence he would arrange to forward them.

The Secretary was authorised to pay the expenses of collections for the Mysore War Relief Fund and the Sea War Library Service from Association Funds.

Any Other Matters of Importance.—

(*a*) *Installation of Telephones in Minor Post Offices.*—The Secretary said he understood that the post office was installing telephones at minor post offices on telegraph lines. At such offices telegrams were telephoned from the nearest telegraph office and were delivered to the addresses as telegrams. The actual telegram followed by post. He asked if any members would be interested in applying for such installations at their local post offices, and was informed that they would be desirable at Aldur, Sangameswarpet and perhaps Santaveri.

(*b*) The Chairman then read a message from H.H. the Maharaja of Mysore to all the people of Mysore desiring that Sunday, 30th June 1940, be observed as a day of special prayer for the success of the Empire and Allies.

Date of Next Meeting.—This was fixed for Friday, 27th September 1940.

With a vote of thanks to the Kadur Club for the use of the Club room the Chairman declared the meeting closed.

A. Middleton,
Chairman.

A. L. Hill,
Secretary.

TEA FOR U. S. A.

The following telegram has been received by the Indian Tea Association, London, from the Tea Association of the U.S.A.; it is published for the information of those members interested in the export of tea to the U.S.A.:—

'Advise all exporters Tea Importation Act remains in force and expect more rigid enforcement.'

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex United Kingdom	Asia ex India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE *From* 1-1-1939 *to* 31-10-1939	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
Madras	...	192	...	1,248	...	...	...	1,440	148
Calicut	...	21,583	2,318	1	...	...	...	25,300	782
Cochin	...	4,895	3,209	103	...	...	573	8,780	423
Mangalore	16	38,085	77,484	23,573	157	...	3,017	1,42,232	9,522
Tellicherry	...	4,713	7,052	...	...	...	693	12,458	...
Tuticorin	...	...	273	1,012	...	...	...	1,285	168
Bombay	...	2,372	25	248	...	...	...	2,645	1
Dhanushkodi	8	...	...	...	...	...	...	8	...
Total ...	24	71,840	90,451	26,185	157	...	5,591	1,94,248	11,044
RUBBER *From* 1-1-1939 *to* 31-10-1939	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Calicut	90,742	5,88,375	1,01,970	...	...	4,47,494	...	12,28,581	3,79,465
Cochin	9,51,688	39,32,597	34,00,245	19,380	...	33,48,852	1,200	1,16,53,962	66,37,277
Mangalore	75,231	1,51,191	...	...	...	...	...	2,26,422	46,057
Tuticorin	2,19,561	...	...	...	...	...	...	2,19,561	...
Alleppey	95,610	22,943	6,91,815	...	11,200	13,06,010	...	21,27,578	4,91,017
Total ...	14,32,832	46,95,106	41,94,030	19,380	11,200	51,02,356	1,200	1,54,56,104	75,53,816
TEA *From* 1-4-1939 *to* 31-10-1939	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Madras	24	77,281	450	4,165	...	...	...	81,920	27,290
Calicut	1,50,860	48,04,506	2,33,061	...	...	17,066	7,020	52,12,533	83,976
Cochin	14,45,495	2,29,75,960	62,997	3,201	30	1,29,244	3,709	2,46,20,636	1,65,167
Mangalore	4,260	1,22,311	...	...	...	...	...	1,26,571	16,624
Tellicherry	...	6,79,074	550	...	...	...	...	6,79,624	7,420
Tuticorin	6,88,204	38,90,818	...	...	...	...	...	45,79,022	...
Alleppey	...	20,899	...	...	...	10,752	...	31,651	86,240
Dhanushkodi	6,80,602	...	...	...	...	...	...	6,80,602	...
Total ...	29,69,445	3,25,70,849	2,97,058	7,366	30	1,57,082	10,729	3,60,12,559	3,86,717

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex United Kingdom	Asia ex India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE *From* 1-1-1939 *to* 30-11-1939	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
Madras	...	192	1,050	1,305	...	...	...	2,547	150
Calicut	...	21,583	3,096	441	...	...	...	26,518	782
Cochin	...	5,047	4,031	1,208	...	...	651	10,937	423
Mangalore	16	38,085	80,207	23,613	157	...	3,077	1,45,155	9,522
Tellicherry	...	4,713	7,052	...	...	...	693	12,458	...
Tuticorin	...	...	273	1,012	...	...	...	1,285	168
Bombay	...	2,372	26	248	...	...	...	2,646	1
Dhanushkodi...	68	...	...	...	...	...	...	68	...
Total ...	84	71,992	95,825	27,827	157	...	5,729	2,01,614	11,046
RUBBER *From* 1-1-1939 *to* 30-11-1939	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Calicut	90,742	5,88,375	1,01,970	...	...	4,47,494	...	12,28,581	3,79,465
Cochin	16,20,545	39,96,847	34,00,245	19,380	17,920	34,38,452	1,200	1,24,94,589	66,37,277
Mangalore	75,231	1,51,191	...	...	...	...	...	2,26,422	46,057
Tuticorin	2,31,761	...	...	...	...	...	...	2,31,761	...
Alleppey	95,610	22,943	6,91,815	...	11,200	13,06,010	...	21,27,578	5,91,817
Total ...	21,13,889	47,59,356	41,94,030	19,380	29,120	51,91,956	1,200	1,63,08,931	76,54,616
TEA *From* 1-4-1939 *to* 30-11-1939	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Madras	24	1,38,669	450	4,415	...	...	...	1,43,558	39,290
Calicut	3,05,243	48,04,506	2,40,161	...	...	17,086	7,020	53,74,016	99,601
Cochin	20,41,277	2,47,29,759	63,312	3,201	30	1,29,244	3,709	2,69,70,532	1,67,412
Mangalore	4,260	1,22,311	...	...	...	...	...	1,26,571	33,190
Tellicherry	...	6,79,074	550	...	...	...	...	6,79,624	7,700
Tuticorin	7,34,672	41,73,281	...	...	...	...	...	49,07,953	2,335
Alleppey	...	20,899	...	...	...	10,752	...	31,651	86,240
Dhanushkodi...	9,13,141	...	...	...	...	...	...	9,13,141	...
Total ...	39,98,617	3,46,68,499	3,04,473	7,616	30	1,57,082	10,729	3,91,47,046	4,35,768

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex United Kingdom	Asia ex India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1939 *to* 31-12-1939.									
Madras	...	192	1,450	1,390	...	...	...	3,032	152
Calicut	...	21,688	3,495	441	..	...	36	27,058	782
Cochin	...	5,117	4,281	1,208	...	...	651	11,257	423
Mangalore	16	38,746	80,332	23,881	157	...	3,077	1,46,209	9,522
Tellicherry	...	4,713	7,052	...	...	...	693	12,458	...
Tuticorin	...	...	273	1,012	...	...	...	1,285	168
Bombay	...	2,372	27	263	...	...	...	2,662	1
Dhanushkodi	87	...	...	...	...	...	...	87	...
Total ...	103	72,828	97,000	28,195	157	...	5,765	2,04,048	11,048
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1939 *to* 31-12-1939.									
Calicut	93,949	5,88,375	1,01,970	...	...	6,14,374	...	13,98,668	3,79,465
Cochin	19,51,931	50,08,074	34,00,245	19,380	17,920	50,64,195	1,200	1,54,62,945	66,37,277
Mangalore	75,231	1,77,623	...	...	...	...	...	2,52,854	46,057
Tuticorin	2,91,339	...	...	...	...	...	...	2,91,339	...
Alleppey	1,01,873	22,943	6,91,815	...	11,200	13,06,010	...	21,33,841	7,58,204
Total ...	25,14,323	57,97,015	41,94,030	19,380	29,120	69,84,579	1,200	1,95,39,647	78,21,003
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1939 *to* 31-12-1939.									
Madras	24	1,57,701	450	5,424	...	...	...	1,63,599	39,290
Calicut	4,63,732	64,46,105	2,40,161	...	...	41,413	7,464	71,98,875	1,06,861
Cochin	26,27,545	2,84,54,917	74,086	3,201	30	3,92,023	3,709	3,15,55,511	1,68,329
Mangalore	4,260	1,67,425	...	...	...	...	...	1,71,685	81,826
Tellicherry	...	8,85,100	550	...	...	...	...	8,85,650	7,952
Tuticorin	7,68,847	42,44,343	...	...	...	27,384	...	50,40,574	2,335
Alleppey	...	20,899	...	...	...	10,752	1,650	33,301	86,240
Dhanushkodi	11,56,911	...	...	...	...	...	...	11,56,911	...
Total ...	50,21,319	4,03,76,490	3,15,247	8,625	30	4,71,572	12,823	4,62,06,106	4,92.833

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex United Kingdom	Asia ex India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1940 *to* 31-1-1940									
Madras	...	...	...	200	...	...	...	200	...
Calicut	...	3,904	...	...	...	10	110	4,024	...
Cochin	...	1,683	...	...	...	...	172	1,855	...
Mangalore	...	9,235	459	3,788	...	625	239	14,346	...
Tellicherry	...	2,257	...	...	...	...	...	2,257	...
Bombay	...	...	1	26	...	...	...	27	...
Dhanushkodi	17	...	...	...	...	...	...	17	...
Total ...	17	17,079	460	4,014	...	635	521	22,726	...
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1940 *to* 31-1-1940									
Calicut	...	...	...	...	...	3,17,408	...	3,17,408	...
Cochin	2,24,886	11,07,409	96,992	...	...	...	...	14,29,287	...
Tuticorin	49,203	...	...	...	...	...	...	49,203	...
Alleppey	...	44,800	...	...	...	...	...	44,800	47,488
Total ...	2,74,089	11,52,209	96,992	...	...	3,17,408	...	18,40,698	47,488
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1939 *to* 31-1-1940									
Madras	24	1,57,701	450	5,424	...	...	...	1,63,599	42,790
Calicut	4,63,732	73,97,455	2,40,161	960	...	41,413	7,464	81,51,185	1,19,724
Cochin	32,79,641	3,04,80,405	82,504	3,201	30	3,92,023	4,209	3,42,42,013	1,72,231
Mangalore	4,260	1,95,231	...	...	...	...	...	1,99,473	1,30,476
Tellicherry	...	10,92,446	550	...	...	...	...	10,92,996	8,316
Tuticorin	7,80,354	44,27,199	...	...	...	10,752	1,650	33,301	86,240
Dhanushkodi	12,63,677	...	...	...	...	...	...	12,63,677	...
Total ...	57,91,688	4,37,71,318	3,23,665	9,585	30	4,71,572	13,323	5,03,81,181	5,62,112

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sales Nos. 7 and 8 were held on 30th July and 6th August 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 7	Sale No. 8	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	...	...	10 2	10 4	...
For Internal Consumption:—					
Leaf Teas ...	3 11	3 11	3 11	3 11	4 3
Dusts ...	5 0	4 9	4 11	4 1	4 5
Green Teas ...	6 11	7 0	6 5	4 7	...

RUBBER.—London Rubber on August 13, 1940, 12 1/16*d.* (Paid and Buyers).

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on July 30 & Aug. 6, 1940
Dunsandle ...	... 53
Heavenford ...	... 38
Kadalaar ...	... 59
Parkside ...	... 77
Vagavurrai ...	... 61

Rubber

	Sale on Aug. 3, 1940
Ribbed Smoked Sheet ...	54½
Contract Crepe ...	51
Mottled Brown Latex Crepe	48½ to 49½
Brown Scrap Crepe ...	47

The Madras Market

Current on 15th August, 1940.

The market has been very lifeless but there has been a little more confidence shown in some of the investment scrips though the amount of turnover has been negligible during the past fortnight. Government securities have remained steady until two days ago when a weakness crept into the market which was probably due to the prevailing unsettledness caused by the domestic political disagreements. Actually very little change has been seen and the Security prices have receded slightly from the highest price touched a week ago. 3½% Paper advanced from Rs. 90-4 as. to Rs. 90-12 as. but during the last few days has receded again to Rs. 88-12 as. 4% 1960/70 at one time touched Rs. 104-8 as. and was last quoted at Rs. 104-4 as. The subscriptions to the 3% Defence Bonds continue very satisfactory and out of the total of Rs. 20 crores of the 5% 1940/43 Rs. 11,59,67,400 have now been converted into the 3% bonds and in addition Rs. 5,16,25,400 have been subscribed in cash.

Rubber.—The market for the commodity has continued very firm and is now quoted buyers 13½*d.* and sellers 13¾*d.* for Spot. The local price has naturally advanced in sympathy and uncouponed is now quoted at 48 cents and 9 cents for the coupon. This should have given more encouragement than it has to the share market which however remains very much in the Doldrums. No dividend announcements have been received since our last report. Business in Cochin Malabars has been done at up to Rs. 6 cum dividend with still some inquiry at this rate. Cochin Rubbers was reported at Rs. 12-4 as. and Tropicals at up to Rs. 18-4 as. ex-dividend. Inquiries were seen for Nilamburs and business was concluded at Rs. 5-8 as. and Rs. 5-12 as. Coorg Rubbers changed hands at Rs. 24-4 as. and Travancore Rubbers at Rs. 5-8 as. to Rs. 5-12 as. Kalpettas had inquiries up to Rs. 15-4 as. without finding sellers. Midlands had good buyers at Rs. 3-13 as. and Rs. 3-14 as. with buyers over. Manalurs had buyers at Rs. 2-15 as. and small business was done in Thirumbadis at Re. 1-6 as. with sellers over. Cochin Malabar Prefs. have good buyers around Rs. 60-8 as. with sellers difficult to find.

Teas.—The price of tea in Colombo is well maintained and High Grown at last sales averaged 92 cents, Medium Grown 75 cents. Share prices however continue dull but steady. Some activity has been seen in Chembra Peaks during the last few days and after falling to Rs. 2-12 as. cum dividend after the dividend announcement have now improved to Rs. 2-15 as. and Rs. 3 cum dividend. Nilgiri Neergundis changed hands at 12 as. Highland Produce were reported at Rs. 24 with Vellamalais at Rs. 10 ex-dividend. Small Business was done in United Nilgiris at Rs. 109-8 as. and limited business in Kalasas at Rs. 6. Sellers were still absent in Peermades and Periakaramalais for which inquiries appeared.

FORTNIGHTLY RAINFALL STATEMENT

July 21, 1940 *to August* 3, 1940—(*Inclusive*).

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	2·05	3·86	68·51	74·42	25. Kotagiri ...	0·30	1·29	26·00	27·59
3. Kallar B'dge	5·04	6·29	77·60	88·93	26. Ootacamund...	0·52	0·75	25·20	26·47
4. Koney ...	3·75	1·43	71·76	76·94	27. Yercaud ...	1·37	2·73	26·79	30·89
8. Twyford ...	5·46	20·19	132·82	158·47	30. Devarshola T.E.S. ...	1·38	2·60	41·86	45·84
9. Pettimudi ...	7·14	22·02	190·91	220·07					
10. Kalaar ...	5·61	17·26	135·61	158·48	31. CALICUT ...	2·92	10·30	70·21	83·43
11. Chittavurrai...	1·41	0·39	31·33	33·13	32. Kuttiyadi ...	4·98	10·52	64·34	79·84
12. BODI'KANUR ...	...	...	10·06	10·06	33. Vayitri ...	3·74	9·80	97·50	111·04
13. COCHIN ...	2·15	9·88	65·14	77·17	34. Manantoddi...	2·58	8·54	62·84	73·96
14. Mooply ...	3·24	6·72	73·35	83·31	35. Bilgiris ...	2·79	2·61	31·40	36·80
15. Pachaimallai	2·57	9·27	78·24	90·08	38. Pollibetta ...	2·19	2·26	40·70	45·15
16. Mudis ...	5·22	16·42	150·76	172·40	39. Coovercolly ...	3·30	4·00	43·35	50·65
17. POLLACHI ...	0·03	0·92	18·97	19·92	41. Kadamane ...	9·61	13·91	135·75	159·27
18. Ropeway Waterfall ...	0·53	2·54	48·39	51·46	43. Merthisub'gey	5·26	9·07	63·79	78·12
					45. Balehonnur ...	5·40	10·23	59·82	75·45
21. Kerala Estate	3·00	7·50	107·25	117·75	46. MANGALORE ...	13·62	6·48	60·35	80·45
22. Naduvattam	2·20	2·94	60·61	65·75	47. MADRAS ...	1·00	0·30	9·39	10·69
24. Coonoor ...	0·26	2·46	21·56	24·28					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor, 'Glenview', Coonoor, Nilgiris

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EDITORIAL

In February of this year Mr. E. H. Francis, the then President of the U.P.A.S.I., issued an appeal to all planters in South India for subscriptions to the U.P.A.S.I. War Fund. The foundation of the Fund was a regular monthly subscription and, as will be seen from another page, a considerable number of planters are paying in to the Fund a regular sum each month.

The Executive Committee decided that, after clearing all collection charges—(*a*) 75% of the remainder should be paid over to the Viceroy's War Purposes Fund and (*b*) 25% should be retained for the benefit of planters or their dependants during and after the war who might need assistance as a direct result of active service in His Majesty's Armed Forces.

Some misunderstanding has been caused by the emphasis placed in the original appeal upon War Charities. It is therefore necessary to emphasise the fact that subscriptions to the Viceroy's War Purposes Fund may be earmarked for any specific object connected with the war, whether the purchase of air-craft, tanks, ambulances or any other form of military equipment, general war purposes, or War Charities. We are authorised to state that subscriptions so earmarked will be forwarded immediately by His Excellency the Viceroy to the objects for which they are subscribed.

At the Annual Conference of the U.P.A.S.I. it was suggested that subscriptions might be sent to H.E. The Madras Governor's War Fund. On the other hand, as membership of the U.P.A.S.I. is drawn not only from the Madras Presidency but also from Coorg, Travancore, Cochin and Mysore, it seemed to be more appropriate for subscriptions to be forwarded to an All-India Fund like the Viceroy's War Purposes Fund. This involves no further delay in the transmission of subscriptions to the objects for which they are specified than is caused by the additional time it takes for communications to reach Delhi.

Planting Companies and individual planters have subscribed liberally to various War Funds such as the Madras Mail Aeroplane Fund, the Madras Governor's War Fund, and the War Funds of various Indian States. The U.P.A.S.I. War Fund is not meant to compete with existing Funds but rather to be complementary to them. It is hoped therefore that all members of the U.P.A.S.I. will give this Fund their earnest consideration. We would repeat that the foundation of it is the regular monthly subscription. Up to date some twelve thousand rupees have been subscribed. This is not a large sum—but a considerable percentage of it is made up of monthly subscriptions. If 400 planters were to subscribe Rs. 25 a month the U.P.A.S.I. would soon be able to pay for a Spitfire, and have something left for the benefit of the dependants of those who serve.

NOTIFICATIONS

TEA EXPORT ALLOTMENT

'In exercise of the powers conferred by the proviso to Section 13 of the Indian Tea Control Act, 1938 (VIII of 1938), as amended by the Indian Tea Control (Amendment) Ordinance, 1940 (No. VII of 1940), the Central Government is pleased to alter the Indian export allotment of tea for the financial year 1940-41, as declared in the Notification of the Government of India in the Department of Commerce No. 202 (4)-Tr. (I.E.R.)/39, dated the 9th March 1940, to 344,918,624 pounds avoirdupois, being ninety per cent of India's standard export figure.' (6-8-40.)

RUBBER EXPORT ALLOTMENT

'In pursuance of Section 13 of the Indian Rubber Control Act, 1934 (XXVIII of 1934), and in supersession of the Notification of the Government of India, in the Department of Commerce No. 243-(11)-Tr. (I.E.R.)/39, dated the 22nd June 1940, the Central Government is pleased to declare that the permissible maximum net exports of dry rubber from British India for the third and fourth quarters of 1940 shall be 3,771.875 tons for each quarter.' (3-8-40.)

LICENSE FEES ON ELECTRIC INSTALLATIONS

The Madras Government has issued a Notification amending the Rules regarding the fees chargeable by Municipal Councils and Local Boards for the grant of permissions or licenses in respect of installations of machinery or manufacturing plant driven by electrical power. The following are the new fees:—

Exceeding ten horse power but not exceeding twenty horse power	Rs.	25	0	0
Exceeding twenty horse power but not exceeding thirty horse power	,,	40	0	0
Exceeding thirty horse power but not exceeding forty horse power	,,	50	0	0
Exceeding forty horse power but not exceeding fifty horse power	,,	75	0	0

The amendment comes into force on and from the 1st October 1940. (2-8-40.)

U.P.A.S.I. WAR FUND

DONATIONS

(*From* 1-6-1940 *to* 20-8-1940)

Firms and Companies—	RS	A	P
Malayalam Plantations Ltd.	1,500	0	0
Harrisons & Crosfield Ltd.	500	0	0

Individual donors—	RS	A	P
Col. W. L. Crawford	100	0	0
Mr. and Mrs. E. L. Poyser	100	0	0

SUBSCRIPTIONS. (MONTHLY)

Anamallais—	RS	A	P
Mr. A. R. Jack	15	0	0
,, O. M. Hetherington	5	0	0
,, H. Gerry	15	0	0
,, G. Bayzand	10	0	0
,, D. A. Sladen	10	0	0
,, A. G. Wilson	10	0	0
,, C. F. Clark	15	0	0
Coorg—			
Mr. C. L. J. Humphreys	5	0	0
,, Ivor Bull	15	0	0
,, J. H. Sprott	5	0	0
,, F. N. Betts	10	0	0
,, J. S. Youngman	10	0	0
,, P. Green	9	8	0
,, R. W. J. Egerton	10	0	0
,, H. J. Cheesley	10	0	0
,, S. S. B. Ball	10	0	0
,, G. Scotland	5	0	0
,, C. N. Subramaniam	3	8	0
,, C. R. Jessop	5	0	0
Kanan Devans—			
Mr. A. G. Macgregor	15	0	0
,, R. S. Imray	7	0	0
,, C. H. Mitchell	15	0	0
,, J. H. Wilkes	10	0	0
,, I. Blair Hill	10	0	0
,, W. S. S. Mackay	10	0	0
,, R. I. M. Duncan	11	4	8
,, A. J. E. Steven	15	0	0
,, W. H. N. Knight	5	0	0
,, G. C. Jack	5	0	0
,, W. B. Cayley	10	0	0
,, J. D. Aitken	5	0	0
,, J. M. Robertson	5	0	0
,, K. T. Beaumont	5	0	0
,, R. F. Bowles	10	0	0
,, E. H. Francis	50	0	0
Mundakayam—			
Mr. J. Doig	15	0	0
,, N. B. Hartley	15	0	0
,, A. D. Vincent	30	0	0
Mysore—			
Mr. L. P. Kent	25	0	0
,, C. Courpalais	10	0	0
,, F. A. G. Ratcliffe	10	0	0

Mysore—(contd.)	RS	A	P
Mr. R. C. Lake	10	0	0
,, H. Watson	10	0	0
,, R. C. Morris	13	0	0
,, A. Middleton	7	8	0
,, C. C. Couchman	10	0	0
,, W. W. Mayne	15	0	0
,, M. D'Souza	20	0	0
Malabar—			
Mr. W. Jefferies	20	0	0
,, T. C. Kirkbride	5	0	0
,, R. G. de. R. Norman	10	0	0
Manager and Staff of Pullangode Estate	30	0	0
Nelliampethies—			
Mr. A. Hall	15	0	0
,, M. J. Wright	8	0	0
Nilgiris—			
Mr. E. Sydenham Clarke	15	0	0
,, J. R. N. Thomson	10	0	0
,, Chas. Brown	3	8	0
,, J. Beaver	5	0	0
,, E. E. Fennell	10	0	0
,, E. F. H. Gerrard	5	0	0
,, E. G. Phythian Adams	10	0	0
,, L. A. Hawke	10	0	0
,, A. G. Acaster	12	8	0
,, C. Lumsden Egan	10	0	0
,, N. G. Dysart	15	0	0
,, G. H. Waters	15	0	0
,, D. S. McIntyre	8	0	0
,, S. H. Dean	12	0	0
Nilgiri-Wynaad—			
Mr. J. McBride	20	0	0
,, R. N. W. Jodrell	5	0	0
,, J. D. Manning	15	0	0
South Travancore—			
Mr. H. R. Lindsay	20	0	0
,, H. R. Carson Parker	15	0	0
,, M. H. Preston	15	0	0
,, E. Gray	10	0	0
,, E C. Sherman	30	0	0
Wynaad—			
Mr. J. A. Gwynne	15	0	0
,, B. St. J. Boultbee	5	0	0
,, P. A. Naylor	15	0	0
,, F. H. Farmer	10	0	0

Total Subscriptions and Donations received up to 20th August 1940 ...	12,796	5	4
Less expenses on account of postage, and printing of receipt books and circulars	73	13	6
	12,722	7	10

	RS	A	P
Amount reserved for Planters Fund	3,243	1	10
Amount remitted to H. E. The Viceroy's War Purposes Fund	9,479	6	0
	12,722	7	10

TEA PROPAGANDA IN INDIA

Mr. P. J. Griffiths' Survey

At the Annual Conference of the United Planters' Association of Southern India, Mr. P. J. Griffiths, M.L.A. (Central), Vice-Chairman of the Tea Market Expansion Board, gave an interesting survey of the work of the Board in India.

Mr. Griffiths reminded the meeting that the work of the Indian Tea Market Expansion Board was based on the two principles of concentration and repetition; concentration meant working in a continuous geographical belt so that the work done by one party might induce the atmosphere favourable in a locality to the work of the next adjacent party. The principle of repetition meant that contact should be made with the same people again and again rather than occasional contacts with a large number of people. This was in contrast with the principle followed in Ceylon. There, three motor vans covered the whole Island and only returned to any particular place after an interval of two or three months; they thus came in contact with a large number of people three or four times only in a year. The Indian principle was to have more frequent contacts with fewer people.

A year or so ago he came to the conclusion that these principles were not being carried to their logical conclusion and that they demanded the replacement of a purely rural campaign by a mainly urban campaign. This had given rise to some controversy. Those who opposed the change maintained that the people of India lived in villages and that their work must therefore be done mainly in the villages; they also maintained that it was easier to make an impression in the village, whereas work in a large town would be a drop in the ocean. As against this there were sufficient cogent arguments in favour of town work. Social habits tended to spread from the town to the country rather than from the country to the town, so that if the townsfolk were converted to tea-drinking the country folk would follow. In many large towns little tea was drunk, and the Board had previously been working in very few of these towns. Moreover experience suggested that townsfolk were more ready than country folk to spend money in new ways and would therefore be more quickly affected by a tea-drinking campaign. Then supervision could obviously be closer in towns than in the mofussil.

In reply to the argument that the people of India lived in villages and that the Board's work must mainly be rural in character, Mr. Griffiths pointed out that we could at the most cope with about half a million people at a time. Once we had chosen which half a million could be influenced most quickly and which half a million would in its turn most strongly influence other people, the question as to where the other 300 or 400 million people lived was of no importance. There could be no doubt that if we wanted to find the half a million people who would respond most readily and would count for most, we should find them in the towns.

The Board had accepted these views and an experiment was started in 1939 in four towns; that experience had justified itself and urban work was therefore being extended to about 12 towns. Each town was divided up into sectors and an area containing 100 to 150 houses was allotted to each party. The job of that party was to distribute liquid tea to every house in the area at a fixed time every day. The important thing was regularity. Timings were written up on street corners to facilitate supervision. At the beginning of such a campaign, refusals to take tea from our parties were fairly common, but with a little persistence they soon diminished. The next stage was for the parties to seek access to the houses and to brew the tea in the presence of the ladies. Mr. Griffiths had been astonished at the success achieved by the Board's staff in this respect, particularly in South India. Once access to the house had been secured the sale of pice packets became the next most important thing. As the parties did not work on Sundays, people who were taking to the tea habit might be expected to want extra pice packets on Saturday and this afforded a very valuable test of the impression made.

It was too early, said Mr. Griffiths, to dogmatise as to the results of the campaign but all the signs todate were very hopeful. Personal observation had shown that the Board's staff was being welcomed and that the bringing round of tea was an event to which those concerned looked forward every day. In most cases husbands were inclined to think that tea should be a luxury reserved for them, but their womenfolk were not willing to accept this view, and the women and children might be said to be almost keener than any other section of the population.

Mr. Griffiths then quoted the pice packet figures and pointed out that in the course of four months the sales of pice packets in Lahore had risen from 154 daily to 1,800 daily, while the Saturday sales had risen in the same period from 295 to 3,300. Similar figures were quoted with regard to other towns. Shop stocks also showed that the public and therefore the shopkeepers were taking an interest in tea. Taking all these things together it seemed clear that the campaigns were producing a good effect. It was not easy to decide after what period the campaign should be discontinued; experiments were being conducted to discover this and after each withdrawal was effected steps were taken to discover how far the tea-drinking habit continued.

Mr. Griffiths then dealt with the work done in industrial establishments. The attempt to introduce rest-pauses with tea had not been very successful and had been replaced by a campaign for setting up canteens in industrial establishments to sell tea at one pice per cup to all workers. The results in Bombay had been most encouraging. In Coimbatore we had to start from zero but there too the results were encouraging. Much more remained to be done and Mr. Griffiths regarded this as one of the most important aspects of our work.

There was one respect in which Mr. Griffiths felt that the Board had failed so far, and that was with regard to the introduction of tea in schools. Mr. Griffiths' visit to Ceylon had impressed him with the remarkable effect of the work being done by the Ceylon Tea Propaganda Board in connection with schools and he was determined that similar work should be done by the Board in India.

Expansion of the Indian market appeared to him to be the best hope of salvation for the tea industry and he was determined to spare no efforts to that end.

THE CULTIVATION OF PYRETHRUM IN INDIA

By Lt.-Col. G. Covell, I.M.S., Director, Malaria Institute of India.

Following the reports of the successful control of malaria epidemics in rural areas in South Africa by the spraying of dwellings with pyrethrum insecticides, this measure was employed in Delhi in 1936 for the protection of railway personnel and other employees housed in well-built quarters. The results as regards malaria reduction were so striking that the method was recommended for use throughout India for all personnel in malarious areas similarly housed, military, railway, police, forest and engineering departments, labour forces on estates, etc., and it was anticipated that its use would be limited to such cases. During the last three years, however, it has been demonstrated that this measure is also applicable in villages in India, and experiments in Delhi Province and more recently in Coorg and Madras Presidency have led to the hope that we have at last available an effective weapon for combating rural malaria, provided that the flowers can be grown successfully in this country at a reasonably moderate price. Reports regarding the results achieved by the spraying of quarters of labour forces on estates and police, railway and forest department personnel from many parts of India have been uniformly encouraging. This measure is likely to be very largely used in future military campaigns in malarious countries, whilst in the event of yellow fever ever being introduced into India, it would be an invaluable aid in preventing the spread of this disease.

Pyrethrum belongs to the genus Chrysanthemum, which contains more than one hundred species, but only one of these, *Pyrethrum cinerariæfolium*, is commercially important. The flower resembles in appearance the ordinary field daisy. It is said to have been originally employed as an insecticide in Persia, but it was used in Europe for this purpose more than a century ago.

Pyrethrum was introduced as an insecticide into the United States of America about 1860, and has been very widely used in that country, first as powder and in more recent years in the form of kerosene extracts. The importation of pyrethrum into the U.S.A. in the year 1935 exceeded 16 million pounds. Until 1914, most of the pyrethrum used for commercial purposes was grown in Dalmatia, but during the war of 1914-18 supplies from this source were cut off and Japan was able to seize the market. The plant was introduced into Kenya in 1928 and has now become an important industry in that country, Kenya-grown flowers being of particularly good quality owing to their high pyrethrin content. The plant has also been grown in commercial quantities in Algeria, Brazil, Bulgaria, California, China, France, Italy, Persia, Russia, Spain and Switzerland, but the combined production from all these sources is small.

In India, attempts have been made to cultivate pyrethrum in a number of localities in various parts of the country in recent years. Samples of flowers grown in Kashmir, in Palampur and Kulu (Punjab), in the neighbourhood of Peshawar and in the Kurram Valley (N.-W.F.P.), and in the Nilgiri Hills have been tested as to their mosquitocidal value at the Malaria Institute of India and have yielded excellent results. The plant has not yet been produced in this country on a commercial scale, but it is certain that an ample supply of Indian-grown pyrethrum of high quality will be in the market within a few years. Of the places mentioned above, production is most advanced in Kashmir.

The following information regarding the cultivation of pyrethrum has been extracted mainly from *Pyrethrum Flowers* by C. B. Gnadinger, Ed. 2 (1936), which is recommended for study by anyone contemplating the cultivation of the plant in India.

Pyrethrum thrives best on well-drained calcareous soil with a mild climate throughout the year, high relative humidity and a long growing season. A humid or heavy soil is said to be unfavourable. In Dalmatia from 20,000 to 45,000 plants are set out to the acre. The yield in the first year is scanty, but the second harvest is good and the plants continue to bear for a number of years, as long as 15 years on well-drained hillsides. The seed is sown in hotbeds and the seedlings are transferred to the fields about six months later. In harvesting, the flowers are cut off just below the head, and are dried in the shade unless rain is threatening. In Japan the conditions and method of cultivation are somewhat different. One pint of seed is used to 150 square yards of seed bed, and this will yield seedlings sufficient for an area ten times as great. The seedlings are planted in rows at intervals of seven to twelve inches between plants and one to two feet between rows. Even in the second year the crop is very light, rarely exceeding 38 pounds per acre. The third, fourth and fifth years produce the largest crops, after which the yield falls off. Drying of the flowers is carried out partly or entirely in the sun.

It should be emphasized that pyrethrum can only be used on a large scale in India for anti-mosquito work if it can be produced at a moderate price, i.e., not more than 4 to 6 annas per lb. for the dried flowers. It seems likely that the crop can be grown profitably at this figure, and if this turns out to be the case, there is little doubt that the demand will be very great indeed, and that it will progressively increase from year to year. Since the flowers so far produced in India are of superior quality to those grown in Japan and equal to those produced in Kenya, there seems every prospect that she will eventually be able to build up considerable export trade to other parts of the world.

An encouraging feature regarding the cultivation of pyrethrum in India is that since it has now been proved that flowers of high quality can be produced in a number of different localities, no particular area can secure a monopoly of the industry.

AVERAGE PRICES OF COMMON TEAS DURING JULY 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	6	0	8	2
Tanjore	0	8	9	0	9	6
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	9	0	9	3
Tiruvarur	0	8	6	0	9	2
Pudukkottah	0	8	0	0	8	6
Karur	0	8	6	0	9	7
Erode	0	8	1	0	8	7
Tiruchengodu	0	8	3	0	8	9
Namakkal	0	8	2	0	8	8
Salem	0	8	1	0	8	9
Dharmapuri	0	8	2	0	8	8

INDIAN COFFEE CESS COMMITTEE

Review of the activities of the Indian Coffee Cess Committee in India during the first quarter of 1940.

During the period under review, the Market Expansion Sub-Committee of the Indian Coffee Cess Committee met once, at Bangalore, on the 16th February, 1940. Mr. R. C. Morris, the Vice-Chairman of the Committee, presided.

Three independent and interesting reports on coffee propaganda work in India were before the Sub-Committee. The first of these had been submitted by Mr. J. H. Sprott, who had visited New Delhi in November 1939 to attend a meeting of the Advisory Board of the Imperial Council of Agricultural Research. During his sojourn in Delhi, he visited India Coffee House, New Delhi, several times and studied on the spot the local conditions *vis-a-vis* coffee propaganda work, and drew up for the consideration of the Committee his observations on the work in progress together with his recommendations on the future programme and policy the Committee should adopt in New Delhi.

The other two reports before the Sub-Committee referred to the work in Bombay. Mr. R. C. Morris had paid a visit to Bombay in November 1939 on private business and had made use of this opportunity to inspect the Sub-Office and India Coffee Houses in Bombay. His inspection notes and specific recommendations on certain aspects of the work at Bombay were before the Sub-Committee in the form of a report. Besides, an *ad hoc* Sub-Committee consisting of Messrs. F. E. James, Sylvester Pais and J. H. Sprott had also visited Bombay and made a thorough and exhaustive study of the work in progress in Bombay since 1936 and the results obtained. A full and detailed account of the findings of this *ad hoc* Sub-Committee together with their recommendations was the third report placed before the meeting.

The salient feature of these reports was the general approval of the lines on which coffee propaganda work had been carried on at Bombay and Delhi, as well as the satisfaction over the results hitherto obtained. There were, however, directions in which, according to these reports, improvements were possible. The Sub-Committee considered at length these suggestions and decided to give immediate effect to some of them.

Turning to matters of general interest, the Sub-Committee noted with deep satisfaction that the Indian coffee industry was keen on contributing its share to the Empire's war efforts and looked to the Committee to give a lead. From enquiries made through the Indian Coffee Market Expansion Board, London, it had also been ascertained by the Committee that the Director of the Canadian Legion War Services would welcome the gifts, if any, of Indian coffee planters in India might be willing to offer Canadian Troops. In the circumstances, the Sub-Committee authorized the Vice-Chairman to issue a personal appeal for gifts of coffee or cash donations in lieu of coffee, along with a general appeal in the same behalf. Needless to add that this appeal received the full support of Planters' Associations, as well as the *Planters' Chronicle* and the response to it was quite satisfactory. At the close of the quarter under review, the gifts of coffee reached the substantial figure of 56¾ cwt. in addition to a cash donation of Rs. 803.

Among other important matters that engaged the attention of the Sub-Committee at this meeting was the examination of the tenders received for the supply of raw coffee for use in India Coffee Houses. Tenders had been invited for the purpose through the columns of the Monthly Bulletin of January 1940. The Sub-Committee accepted the tenders of Mr. L. P. Kent for the supply of 5 tons Mysore coffee and of Messrs. Ganesh & Co. for the supply of 10 tons Coorg and 5 tons Mysore coffees.

From the commencement of the quarter under review, the Demonstration Van, which had been working in the Salem District till September 1939, was set to work in Bangalore. Instead of distributing free coffee as at Salem, the Van sold well-made cups of coffee at half anna per cup (5 oz.) at certain selected centres in the city. The Van continued to work in Bangalore throughout the quarter under report except for a brief period of 9 days when it was sent to Sravanabelagola at the time of the Masthakabisheka Festival. In all, the Van sold about 40,000 cups of coffee during the quarter under review. At Sravanabelagola, a number of North Indians, who had not heard of coffee before, tried coffee for the first time in their lives.

An India Coffee House was opened at Calicut on the 11th March. At the end of the quarter there were, in all, 11 India Coffee Houses functioning in different parts of India. The progress made by these Coffee Houses in January and February was very satisfactory but in the month of March and with the onset of hot weather, sales of hot coffee were affected. Secunderabad and Hyderabad were the most affected areas. Cold coffees were therefore immediately introduced in all the Coffee Houses except the one at Calicut.

The Coffee Demonstration Party of Travancore having finished its work at Thiruvalla moved on to Chengannur in January. With the opening of India Coffee House, Calicut, the party working at Calicut was attached to this Coffee House. The Cochin party continued to work as before.

Also the Committee participated in the Bangalore City Market Show held on the 12th and 13th January.

J. G. HAMILTON

Died at Mangalore on 30th July 1940—aged 76.

The late Mr. Hamilton came out to Alston Lowe & Co. at Tellicherry and Mangalore in 1884. Later he took up planting in Mysore and was connected with the Chandrapur and Seagully Estates. In 1914 he took charge of Volkarts Curing Works in Mangalore and retired in 1923.

In earlier days Mr. Hamilton played a prominent part with Digby Brett in founding the U.P.A.S.I. and was Chairman of the Association in 1908-09 and 1910-11. He was Planting Member of the Madras Legislative Council from 1909 to 1912.

E. TEMPLETON WRIGHT

Died at Cannanore on 3rd August 1940—aged about 73.

The late Mr. Templeton Wright was first employed in the Ouchterlony Valley Estates and from 1901 to 1937 was the Manager of the Mamallay Coffee Works. He was also the owner of Bitherikadu Estate.

C. BARTON WRIGHT

Died at his residence in Trichur on 11th August 1940.

The late Mr. Barton Wright was for many years a planter and was also a prominent member of the Cochin Legislative Council. He took a great interest in public life and was particularly enthusiastic in promoting sports.

DISTRICT NOTES

CENTRAL TRAVANCORE

Minutes of an Extraordinary General Meeting (being the first quarterly General Meeting in 1940-41) of the Central Travancore Planters' Association held on Wednesday, 24th July, 1940, at the Peermade Club, at 10 a.m.

Present.

Messrs. W. F. Inman (*Chairman*), J. S. Wilkie, W. A. J. Milner, R. F. Vinen, G. Newton, M. S. Calderwood, A. R. St. George, R. P. Roissier, C. Paterson, W. S. Rowson, A. B. Spence, T. M. Lewis, F. Bissett, G. G. Milne, M. R. Coghlan, D. I. Gardiner, J. M. Wilkie, I. N. James, W. Watters, W. F. Anderson (*Honorary Secretary*).

The Honorary Secretary read the notice calling the Meeting.

Minutes.

The Minutes of the last Annual General Meeting held on the 18th May 1940 which had been published in the *Planters' Chronicle* of 22nd June 1940 were taken as a correct record and signed.

Correspondence.—

(*a*) Read and recorded letter from the European Association regarding Dr. G. S. Arundale's speech on the subject of 'India's War Effort'. The Honorary Secretary was instructed to obtain sufficient copies of the speech in English and Tamil to meet members' requirements.

(*b*) Read letter from Mr. P. Kurien John re. Arookutty Customs. The Honorary Secretary was instructed to inform Mr. John of the steps already taken in this connection.

U.P.A.S.I.—

(*a*) *Tea Product Section Committee.*—The Meeting approved of Mr. W. A. J. Milner's nomination to the Committee.

(*b*) *Annual General Meeting.*—It was proposed by Mr. J. S. Wilkie and seconded by Mr. W. A. J. Milner 'That the Association be represented by our Chairman, Mr. W. F. Inman.' *Carried.*

(*c*) *Labour Department.*—Proposed by Mr. M. R. Coghlan and seconded by Mr. J. M. Wilkie 'That the subscribers to the Labour Department of U.P.A.S.I. with this Association records its appreciation of the services rendered by Mr. C. E. Ricketts throughout his 12½ years career as an employee of the U.P.A.S.I. Labour Department and wish him all good fortune for the future.' *Carried.*

(*d*) *S.I.P.B. Fund.*—(i) The response to the Fund for the present season was duly recorded. (ii) The list of grants made from the Fund as recommended by the Committee for the year 1939-40 was recorded in Committee.

(*e*) Read and recorded letter from the Superintendent, Dymock Estate, re. investment of Funds in War Charities or War Bonds.

Indian Tea Market Expansion Board.—Read and recorded letter from the Indian Tea Association to U.P.A.S.I. dated 12th July 1940 as supplied by Mr. W. A. J. Milner.

Memorandum and Articles of Association.—The Meeting was informed that the revised draft Articles were in the hands of Government for the necessary approval.

War Charity Fund.—

(*a*) Mr. M. W. Hoare was duly nominated as the Honorary Secretary if and when Mr. Calderwood is called up for Military duty.

The Chairman expressed the members' appreciation to Mr. Calderwood for all he has done in this connection.

(*b*) The matter of supplying tea to the Army in India was duly discussed and the Honorary Secretary was instructed to approach Mr. W. A. J. Milner, member of the Indian Tea Market Expansion Board, on the subject.

Inter-District Labour Bye-Laws.—Read letter from Kanan Devan P.A. dated 16th July 1940. The Honorary Secretary was instructed to reply that this Association strongly opposed the expunging of these Rules but were prepared to discuss the question of revision.

Cardamoms.—Read letter from the Secretary, U.P.A.S.I., re. Cardamom Sub-Committee. The meeting unanimously approved of the nomination of Mr. M. R. Coghlan.

Any other business.—

(*a*) *District Sports.*—It was proposed and duly approved that Inter-District Fixtures be postponed for the duration of the War.

(*b*) *Scientific Officer.*—The Meeting was informed that Mr. Manning will most probably be making a stay in the District from the 10th August and directly this is confirmed, members will be duly advised.

(*c*) *Honorary Secretary.*—Owing to the probability of Mr. W. F. Anderson being called for Military Service in the near future, the Meeting approved with appreciation Mr. W. F. Inman's combining the Offices of Chairman and Honorary Secretary as a temporary measure if and when Mr. Anderson has to report for duty.

With a vote of thanks to the Chairman and to members of the Peermade Club for the use of the premises, the Meeting was declared closed.

W. F. INMAN, *Chairman.*

W. F. ANDERSON, *Honorary Secretary.*

COORG

Minutes of an Extraordinary General Meeting of the Coorg Planters' Association held in the Bamboo Club, Pollibetta, on Thursday, 25th July, 1940, at 11-15 p.m.

Present.

Mr. G. Scotland, B.SC. (*Chairman*), Diwan Bahadur K. Chengappa, B.A., Rao Bahadur M. S. Mandanna, Khan Sahib A. Abdul Rahaman Khan, Messrs. J. F. Mackintosh, M.C., Ivor Bull, M.L.C., J. Murphy, J. O. F. Maurice, G. M. Brameld, W. A. F. Bracken, R. W. J. Egerton, S. S. B. Ball, J. Aird, A. C. Thimiah, C. N. Subramanian, P. R. T. Punja and C. L. J. Humphreys (*Honorary Secretary*).

Visitors.—J. W. Pritchard, Esq., I.C.S., Chief Commissioner of Coorg, Mr. M. S. Rangaswamy, B.A., Chief Forest Officer of Coorg.

Before commencing the business the Chairman congratulated Rao Bahadur M. S. Mandanna and Khan Sahib Abdul Rahaman Khan on their recent honours. He also congratulated Mr. J. W. Pritchard on his elevation to the post of Chief Commissioner of Coorg.

Notice calling the meeting.—This, having been previously circulated, was taken as read.

Minutes.—The Minutes of the Annual General Meeting held on the 26th April 1940, having been published in the *Planters' Chronicle*, the Honorary Secretary read the *In Committee* items. They were then confirmed and signed.

Arising out of the Minutes.—

(*a*) *Coffee Loan.*—The Honorary Secretary read a letter dated the 3rd May 1940 from the Commissioner of Coorg in which it was stated that final orders from the Government of India had not yet been received on the memorandum submitted to the local Government by the Association.

In another letter from the Commissioner of Coorg dated 18th May 1940 the Association was asked to nominate one European and one Indian planter to serve on the Coffee Loan Advisory Committee. It was stated that as the matter was urgent the Committee had appointed Mr. G. Scotland and Khan Sahib Abdul Rahaman Khan. The meeting confirmed the Committee's action.

Post of Civil Surgeon, Mercara.—The Honorary Secretary read the Minutes of the Joint Extraordinary General Meeting of the Coorg Planters' Association and the European Association (Coorg Circle) which was held on the 26th April 1940 to consider the above matter. Mr. J. O. F. Maurice enquired what progress had been made by the special Sub-Committee appointed at the meeting. Mr. J. Aird who represented the Sub-Committee, asked that the matter be left for discussion at the European Association General Meeting.

U.P.A.S.I.—

(*a*) *Appointment of Delegate.*—The meeting appointed Mr. G. Scotland as the C.P.A. Representative to the forthcoming U.P.A.S.I. Meetings. Mr. Ivor Bull and Mr. C. L. J. Humphreys would also be attending and the Chairman asked members to make out their proxies in favour of one of them.

(*b*) *Cardamom Sub-Committee.*—The Honorary Secretary read a letter from the U.P.A.S.I. dated 13th July 1940 which asked for the appointment of a representative from Coorg on the new Cardamom Sub-Committee. It suggested that as Mr. Ivor Bull and Mr. C. L. J. Humphreys were the Coorg representatives on the U.P.A.S.I. one of them should be appointed to the new Sub-Committee so that travelling expenses could be cut to a minimum. Mr. Bull's name had, therefore, been suggested by the Committee and the Chairman asked that it be confirmed. Mr. G. M. Brameld, however, proposed that Diwan Bahadur K. Chengappa, as the largest cardamom grower in Coorg, be appointed instead, and this was seconded by Rao Bahadur M. S. Mandanna and carried unanimously.

(*c*) *Cardamom Survey.*—A letter from the U.P.A.S.I. on this subject was read and Mr. Ivor Bull explained the position.

(*d*) *S.I.P.B. Fund Rules Nos. 8 and 22.*—Read and recorded circulars from the U.P.A.S.I. dated 8th May and 3rd June 1940.

(*e*) *S.I.P.B. Fund Appeal.*—The Chairman stated that the S.I.P.B. Fund subscribers had already received a circular asking for contributions to a special appeal. An anonymous member had promised Rs. 15,000 to the Fund if other members would make up a similar amount. He therefore appealed to all members present to contribute as liberally as possible.

Labour Department.—

(*a*) *Delegate and Representative.*—The Chairman informed the meeting that Mr. Ivor Bull and Mr. C. L. J. Humphreys would be attending the forthcoming Labour Department meetings in Coonoor. He asked subscribers to send their proxies to one or other of them. Mr. Humphreys was asked to continue on the Control Committee for next year.

(*b*) *Three-Year Guarantee.*—After some discussion subscribers to the Department asked their representatives to press for a year to year membership for coffee subscribers. They did not feel in present circumstances that these subscribers were in a position to give a three-year guarantee. Subscribers present all promised to join for 1941-42.

Correspondence and any other business.—

(*a*) *Agricultural Provincial Advisory Committee.*—A letter dated 18th June 1940 was read from the Commissioner of Coorg. It requested the Association to nominate a representative on the above Committee. A discussion took place which resulted in the confirmation of the Committee's nomination of Mr. C. L. J. Humphreys as the Association's representative.

(*b*) *Motor Vehicles Taxation.*—The Chairman stated that the Government had accepted the Association's recommendation that the taxation on private estate lorries should not be increased. A notification to this effect had already appeared in the Coorg Gazette.

(*c*) *Mercara Treasury.*—Mr. Ivor Bull complained of the late opening of the Mercara Treasury on Fridays. He said that it caused considerable inconvenience to members who had long distances to travel. The Honorary Secretary was instructed to ask the Chief Commissioner of Coorg that in future the Treasury be opened at 11 a.m. on Fridays as on other days of the week.

(*d*) *Late arrival of Mail Bus at Pollibetta Post Office.*—The Honorary Secretary read a letter on this subject from the Superintendent of Post Offices, Mysore. As it stated that the present contractor would be changed at the beginning of August, it was considered unnecessary to take any further action.

(*e*) *Coffee Husk.*—A letter from the Commissioner of Coorg dated 9th May 1940 stated that the rules under the Coffee Husk Act had not yet been drawn up. The Chief Commissioner informed the meeting that they would shortly be published in the Coorg Gazette and that the Association would then be able to make any comments it wished before they came into force.

(*f*) *Sale of Timber for War Purposes.*—After an introduction by the Chairman, Mr. Rangaswamy Iyer, Chief Forest Officer of Coorg, informed the meeting that there had been enquiries for the supply of timber for War purposes. The Coorg Government had only been able to supply half of one order for Rosewood and Honne. Another 5,000 c. ft. of each was still required and Mr. Rangaswamy Iyer wondered whether the supply of this amount would interest members of the Coorg Planters' Association. The present prices were Re. 1-12-0 per c. ft. for Honne and Rs. 2 per c. ft. for Rosewood. The minimum girth required was 4½ ft. He produced copies of specifications and the Honorary Secretary agreed to circulate these to all members with a request that those interested should communicate direct with Mr. Rangaswamy Iyer. The Chairman thanked the Chief Forest Officer for his kindness in attending the meeting.

(*g*) *Marketing of Coffee.*—Mr. Ivor Bull informed the meeting that a scheme for the re-organisation of the marketing of India coffee was under consideration. He gave a short résumé of the scheme which he hoped would be in operation before the coming crop season.

There being no further business the meeting terminated with a vote of thanks to the Chair.

G. SCOTLAND,	C. L. J. HUMPHREYS,
Chairman.	*Honorary Secretary.*

WYNAAD

Minutes of a meeting of the Wynaad Planters' Association held at the Meppadi Club, on Wednesday, 24th July, 1940, at 3-30 p.m.

Present.

Messrs. J. A. Gwynne (*Chairman and Hon. Secretary*), I. W. Finlayson, B. D. Darkin, R. W. M. Hay, C. E. A. Ewart, E. R. Peachey, H. S. Lake and P. A. Naylor.

The Notice calling the meeting was read.

The Minutes of the last meeting having been published in the *Planters' Chronicle* were taken as read and confirmed.

The following items arising out of the Minutes of the last meeting were recorded: —

That the Deposit Receipt for Rs. 1,000 with the Chartered Bank of India, Australia & China, in safe custody with Messrs. Peirce, Leslie & Co., Ltd., Calicut, had been renewed at the rate of 2% per annum.

That the Budget of the Meppadi Branch of the Ross Institute having been reduced from 2 as. to 1.65 as. per acre by the exclusion of the estimate for an assistant Entomologist was due for confirmation. This was duly proposed from the Chair and carried unanimously.

Delegate to the Annual General Meeting of the U.P.A.S.I.—The Chairman intimated that as he could not attend the meeting as Delegate he had asked Mr. Naylor to represent the Association which he had kindly consented to do.

This was unanimously approved.

Calicut-Ootacamund Road.—The resolution of the Nilgiri-Wynaad P.A. that the P.W.D. take over the Ootacamund-Gudalur-Choladi section of this road was considered in conjunction with the composition of the proposed deputation to Government. The meeting agreed to leave the point at issue to the delegate in consultation with the Executive Committee, U.P.A.S.I.

Vayitri-Manantoddy Road.—The District Board Engineer having advised that the work on the bridges and culverts on this road had been taken on hand from the Tharavanna side, Mr. Naylor drew attention to this emphasising that by doing so the available funds were not being utilised on the more important section lying between Vayitri and Achoor, mile 1 to mile 5-1, which section carries the heavy traffic during the wet weather and therefore where the bridges and culverts require most attention. The meeting decided to again approach the Engineer and press for the work being done on this section.

With a vote of thanks to the Chair the meeting terminated.

J. A. GWYNNE,
Chairman and Hon. Secretary.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 17th August were: —

Rubber, including export licenses ...	... 55.00 cents a lb.
Rubber Export Quota ...	... 7.80 cents a lb.
1st quality rubber alone ...	... 50.00 cents a lb.

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1940 *to* 29-2-1940									
Madras	...	...	...	338	...	...	...	338	...
Calicut	...	7,172	1,361	91	...	10	290	8,924	...
Cochin	...	1,683	...	...	...	...	172	1,855	...
Mangalore	...	10,863	8,162	8,360	...	625	1,036	29,046	...
Tellicherry	...	2,257	...	...	...	...	...	2,257	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	19	...	...	...	...	...	...	19	...
Total	19	21,976	9,524	8,815	...	635	1,498	42,467	...
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1940 *to* 29-2-1940									
Calicut	1,32,048	99,854	...	...	...	4,24,928	...	6,56,830	...
Cochin	6,10,440	18,00,264	1,41,792	11,200	...	...	...	25,63,696	...
Mangalore	...	...	...	...	...	24,640	...	24,640	...
Tuticorin	87,092	...	...	...	...	...	...	87,092	...
Alleppey	1,09,960	44,800	...	33,600	...	3,16,512	...	5,04,872	81,088
Total	9,39,540	19,44,918	1,41,792	44,800	...	7,66,080	...	38,37,130	81,088
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1939 *to* 29-2-1940									
Madras	24	1,68,751	450	5,568	...	...	...	1,74,793	55,040
Calicut	4,84,816	80,25,649	2,40,361	960	...	2,54,123	7,464	90,13,373	1,38,782
Cochin	36,46,417	3,09,80,151	82,504	3,201	30	8,89,387	4,794	3,56,06,484	1,73,842
Mangalore	5,664	1,95,213	...	...	...	...	...	2,00,877	1,38,407
Tellicherry	...	10,92,446	550	...	...	...	...	10,92,996	8,316
Tuticorin	7,93,780	45,23,965	...	...	...	46,764	...	53,64,509	4,545
Alleppey	...	20,899	...	...	...	10,752	2,250	33,901	86,240
Dhanushkodi	14,52,607	...	...	...	...	...	...	14,52,607	...
Total	63,83,308	4,50,07,074	3,23,865	9,729	30	12,01,026	14,508	5,29,39,540	6,05,172

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE *From* 1-1-1940 *to* 31-3-1940	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
Madras	4	...	...	406	...	...	...	410	2
Calicut	...	10,099	1,361	200	...	910	610	13,180	...
Cochin	...	2,851	...	70	...	...	271	3,192	...
Mangalore	...	16,684	12,318	9,248	200	925	2,993	42,368	...
Tellicherry	...	2,451	...	...	...	...	659	3,110	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	38	...	...	...	...	...	...	38	...
Total ...	42	32,086	13,680	9,950	200	1,835	4,533	62,326	2
RUBBER *From* 1-1-1940 *to* 31-3-1940	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Calicut	1,32,048	1,49,242	...	...	...	7,79,520	...	10,60,810	...
Cochin	7,82,285	25,26,936	1,52,992	11,200	...	6,06,432	...	40,79,845	...
Mangalore	1,777	45,472	...	...	...	49,280	...	96,529	...
Tuticorin	94,352	...	...	...	...	...	...	94,352	...
Alleppey	1,71,560	1,79,200	...	33,600	...	4,31,200	...	8,15,560	1,03,488
Total ...	11,82,022	29,00,850	1,52,992	44,800	...	18,66,432	...	61,47,096	1,03,488
TEA *From* 1-4-1939 *to* 31-3-1940	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Madras	24	1,76,371	450	6,212	...	...	...	1,83,057	60,040
Calicut	4,84,816	83,43,046	2,40,361	960	...	3,16,909	7,464	93,93,556	1,49,506
Cochin	38,77,652	3,21,62,140	82,504	3,201	30	20,61,765	4,794	3,81,92,086	1,74,619
Mangalore	5,664	2,18,268	...	...	...	...	...	2,23,932	1,44,564
Tellicherry	...	12,44,673	550	...	...	...	...	12,45,223	8,543
Tuticorin	7,98,832	45,93,795	...	...	...	66,846	...	54,59,473	6,505
Alleppey	...	20,899	...	...	...	10,752	3,240	34,891	86,240
Dhanushkodi	15,84,591	...	...	...	...	...	...	15,84,591	...
Total ...	67,51,579	4,67,59,192	3,23,865	10,373	30	24,56,272	15,498	5,63,16,809	6,30,017

MARKET REPORT AND PRICES

The Calcutta Market

(*Extracts from the Calcutta Tea Brokers' Association Reports.*)

Sales Nos. 9 and 10 were held on 12th, 13th, 19th and 20th August 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 9	Sale No. 10	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	12 7	12 7	11 9	10 5	9 9
For Internal Consumption:—					
Leaf Teas ...	4 0	3 11	3 11	4 2	4 0
Dusts ...	4 7	4 8	4 10	4 3	4 2
Green Teas ...	7 0	7 0	6 8	5 2	...

RUBBER.—London Rubber on August 26, 1940, 12 11/16*d*.

The Colombo Market

(*Issued by the Colombo Brokers' Association.*)

Average prices obtained (in cents.)

SOUTH INDIAN TEA

	Sales on Aug. 13 & 20, 1940
Mailoor	59
Singara	73
Vagavurrai	67

RUBBER

	Sale on Aug. 15, 1940
Ribbed Smoked Sheet ...	55⅝
Contract Crepe ...	51½
Mottled Brown Latex Crepe	47 to 50½
Brown Scrap Crepe ...	45

The Madras Market

Current on 29th August, 1940.

We regret to have to report that the market has again shown little activity. There has been more interest shown in planting shares but with unfortunately very poor results and the volume of business still remains negligible. Government securities have been very steady to firm and this has been in keeping with the British sterling securities in London. 3½% Paper which receded a fortnight ago below Rs. 89 has recovered again and after touching Rs. 90 is now quoting at Rs. 89-12 as. Most of the other loans show substantial gains and 4% 60/70 is now over Rs. 105.

Rubber.—The market for the commodity on the Spot price has fallen back by nearly 1*d*. and is last quoted at 12¼*d*. buyers, 12⅜*d*. sellers. The price in India has naturally fallen in some measure in keeping with the London price and uncouponed is now quoted at 46 cents and the Quota coupon at 8 cents. The share market has been rather brighter following on the reports and rumours of the companies making good progress during their present financial year. Cochin Malabars have announced the first interim dividend of 5% for the year 1940/41 and this has come some 5 or 6 months earlier than the interim is usually announced, and this has encouraged market expectations for better results during the current year. Today news was received of the announcement of the Kalpetta dividend of 7½% compared with 6¼% last year. Business has been reported in Cochin Malabars at around Rs. 6 ex dividend with the preference at Rs. 60-2 as. Thirumbadis have received a fresh interest and business has been reported at Re. 1-6 as. with possible buyers at Re. 1-7 as. Midlands continue to change hands at around Rs. 4 or just under. Interest was shown in Kalpettas up to Rs. 15-7 as. and Velliamuttams found buyers at Rs. 15-4 as. Travancore Rubbers have been recorded at Rs. 5-8 as. and Rs. 5-10 as. with Tropicals at Rs. 14-4 as. ex dividend. Business was seen in Manalurs at Rs. 2-15 as. and Peninsular Plantations at up to Rs. 3-2 as. Malankara Rubbers announced a final dividend of 5% for the year 31st March 1940 compared with 3¾% for 1939. An announcement of interest in New York during the period under review was that the reserves of rubber stocks for National Defence purposes were to be raised by 180,000 tons to over 400,000 during 1941 at prices ranging from 17 to 18½ per lb. F.O.B. 18 American dollar cents F.O.B. (presumably the port of shipment from the country of export) is the equivalent of about 9½ as. per lb. These purchases are to be in addition to the 150,000 tons already agreed upon and to which must be added 85,000 tons to be purchased under barter scheme with the British Government.

Teas.—The price in Colombo has again shown a substantial advance and the High grown on the report at the last sales fetched Re. 1-11 cents and Medium at 89 cents compared with 92 cents and 75 cents in our last report. Dividends have been announced for Haileyburia with a 5% final making 20% for the year compared with 15% for the last year. United Nilgiris have announced a 2% interim for the year ending 30th September 1940 which is the same as last year. Kalasas 4 as. per share or 2½% for 1940 which is the first dividend since 1927, when 5% was paid. The number of transactions in the share market have, unfortunately, been very few. Periakaramalais have found buyers at Rs. 16-4 as. and Chembra Peaks continue to change hands at around Rs. 3 cum dividend. Highland Produce were reported at Rs. 24 and Fringfords had business between Rs. 6 and Rs. 6-4 as. Vellamalais had buyers at Rs. 10 and better with no sellers. Kalasas had a transaction at Rs. 6 and Ouchterloney Valley debentures once more changed hands at Rs. 102.

FORTNIGHTLY RAINFALL STATEMENT

August 4, 1940 to August 17, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	4·31	9·01	74·42	87·74	25. Kotagiri ...	0·99	0·98	27·59	29·56
3. Kallar B'dge	4·78	10·13	88·93	103·84	26. Ootacamund...	1·62	2·12	26·47	30·21
4. Koney ...	2·79	9·19	76·94	88·92	27. Yercaud ...	2·65	1·34	30·89	34·88
8. Twyford ...	14·71	24·42	158·47	197·60	30. Devarshola T.E.S. ...	3·21	5·73	45·83	54·77
9. Pettimudi ...	13·48	25·22	223·07	258·77					
10. Kalaar ...	11·34	21·99	158·48	191·81	31. CALICUT ...	4·16	12·15	83·43	99·74
11. Chittavurrai...	1·13	1·49	33·13	35·75	32. Kuttiyadi ...	6·82	15·84	79·84	102·50
12. BODI'KANUR...	...	...	10·06	10·06	33. Vayitri ...	5·04	13·48	111·04	129·56
13. COCHIN ...	5·99	12·94	77·17	96·10	34. Manantoddi...	2·93	11·99	73·96	88·88
14. Mooply ...	6·60	16·46	83·31	106·37	35. Bilgiris ...	4·08	1·38	36·80	42·26
15. Pachaimallai	5·99	9·91	90·08	105·98	38. Pollibetta ...	1·71	5·52	45·15	52·38
16. Mudis ...	7·63	15·82	131·75	155·20	39. Coovercolly ...	1·47	N.R.	52·07	53·54
17. POLLACHI ...	0·30	3·28	19·92	23·50	41. Kadamane ...	6·97	25·03	159·27	191·27
18. Ropeway Waterfall ...	0·93	7·94	51·46	60·33	43. Merthisub'gey	2·86	13·82	78·12	94·80
					45. Balehonnur...	3·15	11·19	75·45	89·79
21. Kerala Estate	4·76	9·89	117·75	132·40	46. MANGALORE...	13·05	20·30	80·45	113·80
22. Naduvattam	3·92	9·64	65·75	79·31	47. MADRAS ...	0·83	...	10·69	11·52
24. Coonoor ...	1·40	0·79	24·28	26·47					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor, 'Glenview', Coonoor, Nilgiris

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EDITORIAL

Sir Ramaswami Mudaliar, the Member of the Governor-General's Executive Council for Commerce and Labour, has convened a conference of representatives of the Governments of Mysore, Madras, Coorg, Travancore and Cochin, Planters' Associations, and shippers, traders and curers, to meet on the 18th of September 1940 in order to discuss proposals for the 'war-time control of the production and marketing of coffee'. It is hoped that the conference will be able to agree upon suitable measures to assist the coffee industry. Owing to the number of administrations and interests concerned, it is a unique opportunity of which, we hope, full advantage will be taken.

* * * * * *

Acknowledgment has been received from the St. Dunstan's All-India Committee for contributions made to the St. Dunstan's Fund by the U.P.A.S.I. War Fund. The appeal launched by Sir Clutha Mackenzie in April last has been remarkably successful and already £27,000 have been despatched to London. A recent cable received from Sir Ian Fraser indicates that the number of war-blinded is increasing.

* * * * * *

At the last Annual Conference of the U.P.A.S.I. one of the few resolutions which was passed called the attention of the Government of Madras to the steady deterioration in the Choladi-Gudalur section of the Ootacamund-Calicut Trunk Road and asked that it should be placed under the P.W.D. The Government has now replied to the effect that the suggestion as to the P.W.D. taking over the road cannot at present be complied with, but that steps are being taken to repair the bad stretches of the road at an early date. This is not particularly satisfactory, but better than nothing.

* * * * * *

The President has received a letter from the Military Secretary of H.E. The Viceroy expressing His Excellency's thanks to the members of the U.P.A.S.I. for the lunch which they gave in his honour at the Ootacamund Club on 4th August.

PLANTERS ON MILITARY SERVICE

The following is a list of persons connected with the planting community who have been called to military service after reference to the National Service Advisory Committee since the last list was published in the issue dated 3rd August. This list does not include members of the A.I.R.O. or Naval Reserve who have been called up direct or any others who may have joined the British Army or any other form of National Service direct without reference to the National Service Advisory Committee:—

Name	*Address*
Acaster, A. G.	' Glenview ', Coonoor Post, Nilgiris.
Allen, R. H. C.	C/o K.D.H.P. Co., Ltd., Travancore.
Arbuckle, K. H. V.	Tea Estates India Ltd.
Baker, R. G. A.	Valley End Estate, Mundakayam, Travancore.
Blakeney, T. S.	Monica Estate, Valparai P.O., S. India.
Body, J. U.	Arnakal Estate, Vandiperiyar P.O., Travancore.
Bucknall, B. S.	Peramboo Colly, Chethalli, Coorg.
Cottrell, N.	Lower Paralai Estate, Iyerpadi P.O., Pollachi (E. & S.J.C.).
Cardale, T. D.	Bombay Burmah Trading Corporation Ltd.
Caldwell, J. F.	Travancore Tea Estates Ltd.
Campbell, P. D. J.	Bombay Burmah Trading Corporation Ltd.
Champion-Jones, R. N.	Naduar Estate, Valparai P.O.
Cooke, G. A.	Munjamullay Estate, Vandiperiyar P.O.
Cox, J. A.	Alleppey, Travancore.
Darkin, R. B.	Sheikalmudi Estate, Hardypet P.O., Annamallais.
Danvers-Davy, C. E.	Kairbetta Estate, Kotagiri, Nilgiris.
Davis, P. W.	Chamraj Estate, Katary P.O., Nilgiris.
Egerton, J.	Jumboor Estate, Coorg.
Elliott, G. G.	High Forest Estate, Mudis.
Elliott, J. B.	C/o Bayley & Brock, Kotagiri, Nilgiris.
French, P. T.	Velonie Estate, Valparai P.O. (K.D.H.P.).
Gosselin, Major H. de V.	Drumella Estate, Springfield P.O., Nilgiris (Saracen Head Tea Co.).
Green, P. B.	Thiashola Estate, Kilkundah P.O., Nilgiris (Tea Estates Ltd.).
Haywood, J. W.	C/o T. Stanes & Co., Ltd., Coimbatore.
Heron, S.	The English and Scottish Joint Co-operative Wholesale Society.
Henshaw, J. R.	Mudis P.O., Pollachi, Coimbatore (Bombay Burmah).
Hunnisette, D. S.	C/o Darragh Smail & Co., Ltd., Alleppey.
Hutchinson, T. C.	The English and Scottish Joint Co-operative Wholesale Society.
Jones, W. T.	The English and Scottish Joint Co-operative Wholesale Society.
Lee, C. F. M.	C/o K.D.H.P. Co., Ltd., Munnar, Travancore.
Leslie, C. J.	Cloudland Estate, Uthamapalayam P.O.
Merson, D. T.	Caroline Estate, Mango Range P.O., Nilgiris (E. & S.J.C.).
Murphy, J. F.	Marvahulla Estate, Kotagiri P.O., Nilgiris.
Radford, F. F.	Chokanad, Munnar P.O., Travancore (K.D.H.P.).
Ratcliffe, F. A. G.	Hosergooda Estate, Saklaspur, Hassan P.O., Mysore State.
Ricketts, C. E.	U.P.A.S.I., Coonoor.
Ross, A. M.	C/o Harrison and Crosfield Ltd., Cochin.
Sewell, V. E.	The English and Scottish Joint Co-operative Wholesale Society.
Slayter, J. N. B.	The Kanan Devan Hill Produce Co., Ltd.
Stewart, C.	The English and Scottish Joint Co-operative Wholesale Society.
Taylor, E. H.	Poonmudi Estate, Kallar Bridge P.O., Travancore.
Thorpe, R. W.	Stanmore Estate, Valparai P.O., Coimbatore (Tea Estates).
Trafford, J. B.	Ediwana Estate, Nilambur P.O., S. Malabar (Peirce, Leslie).
Windle, P. St. M.	Peirce, Leslie & Co., Ltd., Cochin.
Wilson, A. G.	Mudis P.O., Anamallais (Bombay Burmah Co., Ltd.).

COFFEE PRICE CONTROL

Possible Application of Australian Butter Marketing Experience

(Specially contributed)

The information covering Australian Butter Marketing on which this article is based has been obtained from the *Australian Information Bulletin*, Industries Series A No. 8 revised to June 1939.

During the period 1924-25—1937-38 the Australian production of butter has varied between 112,737 tons and 209,410 tons. During the same period the percentage exported has varied between 30 and 56%. The annual production is very largely dependent upon climatic conditions, but the Industry has grown rapdily during the period mentioned, and the internal consumption has risen steadily.

In 1924 the then Commonwealth Government at the request of the Dairying Industry introduced legislation under the title of the Dairy Produce Export Control Act to provide for the orderly Overseas marketing of Butter and Cheese. In accordance with the Act a poll of producers was taken and, as the majority was in favour, the legislation was brought into operation. Under the Dairy Producers Export Control Act, 1924 export was controlled by the Dairy Produce Control Board which was constituted under the Act.

In 1925 Australian Butter producers in common with other primary producers found themselves subject to disabilities caused by the Tariff Policy, and in order to obtain for Dairy Farmers a return more in keeping with Australian living conditions than could be obtained by accepting London parity prices, a scheme known as the 'Patterson Plan' was introduced and began operation on 1st January 1926.

Apparently the Dairy Produce Control Board constituted under the Dairy Produce Export Control Act 1924 found it impossible to raise the average prices obtained in the internal and export markets to an extent which gave producers an economic return, and presumably at that time the Australian Government was not prepared to enact legislation which would have the effect of maintaining internal prices at well above export prices. The 'Patterson Plan' was a voluntary one subject to no legislative enactment and was administered by a Committee designated the Australian Stabilisation Committee.

The theory of the 'Patterson Plan' was simple. Producers of Butter paid a levy on the quantity produced and the funds so obtained were used to pay a bonus on exports. The local price being dependent on export rates, this bonus on export meant that an equivalent rise automatically took place in the local market. At the time of the institution of the Plan the quantity exported was approximately one-third of the production. Therefore a levy of 1 penny per pound on all Butter produced provided a bonus of 3 pence per pound on Butter exported, the local price being thereby raised by 3 pence per pound on two-thirds of the production, the gain to the manufacturer being 2 pence per pound on his total production.

It is estimated that the 'Patterson Plan' meant an increased return to the Dairy Farmers of Australia of approximately £2,250,000 per annum.

In 1934 the 'Patterson Plan' had to be abandoned in favour of the Commonwealth Price Equalisation Plan, which was supported by Complementary State and Commonwealth legislation providing for compulsory export of a defined proportion of production. The abandonment of the Plan was brought about by the serious drop in prices in the United Kingdom and the increasing tendency for certain manufacturers to refrain from exporting, and to sell all their butter on the local market without paying any voluntary levy. Thus the Plan appears to have failed on account of its voluntary basis.

The extent to which the operation and success of the 'Patterson Plan' during the period 1926-34 was dependent upon the butter export control exercised by the Dairy Produce Control Board established in 1924 is not made clear by the information available, but the fact that the 'Patterson Plan' was introduced as a voluntary measure in 1926 following the setting up of the Dairy Produce Control Board in 1924 indicates that the powers of export control of the Dairy Produce Control Board were insufficient to enable them to bring about the rise in the average of the domestic and export prices which was necessary for the wellbeing of the Australian Dairying Industry.

The simplicity of the 'Patterson Plan' and its successful operation in Australia in respect of Butter over a period of eight years encourages the examination of the possible application of a similar scheme to the Indian Coffee Industry in order to meet the situation which has arisen as a result of the loss of India's chief Coffee Export Markets.

Butter is produced in all the States of the Commonwealth, but the great bulk of the production comes from three States, the States of New South Wales, Victoria and Queensland producing 90% of the total. In 1936-37 there were 414 Butter Factories in the Commonwealth. The distribution of the Australian Butter Industry is therefore not very dissimilar from the distribution of the Coffee Industry in India. As in the case of coffee the total production is subject to large seasonal variations, but in addition Australia during the past 15 years has had to deal with a considerable increase in total production against a comparatively small increase in internal consumption. The most important difference between the Butter Industry and the Coffee Industry from a marketing point of view is the seasonal character of the Coffee crop which comes on to the market during a period of say five months, whilst Butter is produced throughout the year with presumably very considerable variations within the year. This is probably not a very important distinction between Butter and Coffee, as it must be very largely off-set by the perishable character of Butter and the expensive cold storage facilities required to carry stocks.

It is estimated that on the basis of an average crop the internal coffee consumption of India is about half the total production. Therefore applying the 'Patterson Plan' to Coffee, a levy on producers of Coffee of Rs. 5 per cwt. would make it possible to pay an export bonus on all Coffee shipped to foreign markets of Rs. 10 per cwt. assuming that the cost of enforcing the scheme was neglible. As is shown by the experience of the operation of the 'Patterson Plan' with respect to Butter in Australia, the export bonus of Rs. 10 per cwt. would have the effect of automatically maintaining the internal price at Rs. 10 per cwt. over the export parity, and as all prices must sink to export parity in the absence of any control the average price realised by producers must rise by Rs. 5 per cwt.—i.e. Rs. 10 less the cess of Rs. 5—as a consequence of the payment of an export bonus of Rs. 10 per cwt.

On the basis of an average crop of 15,000 tons the increased return to growers produced by the payment of an export bonus of Rs. 10 per cwt. paid out of proceeds of a cess on total production of Rs. 5 per cwt. would amount to Rs. 15,00,000 per year.

The position of the Coffee Industry in India makes it quite impossible to contemplate the possibility of applying the 'Patterson Plan' to the Indian Coffee Industry on a voluntary basis. The application of the Plan to the Indian Coffee Industry would necessitate legislation under which a cess on all producers could be enforced, and the creation of simple machinery through which the export bonus could be paid.

The necessary legislation might take the form of prohibiting the sale of Coffee by growers other than under licence. The licences might be issued by the Governments concerned in the form of coupons at the price per cwt. fixed from time to time, probably yearly, by the Control Board created by the legislation. The legislation would make it an offence for any person other than a grower, or registered Curer as a grower's agent, to hold any stock of coffee exceeding say one cwt. not covered by coupons. The coupons would pass from seller to buyer and in the case of coffee shipped would eventually be surrendered to the Customs who would issue a title to payment of export bonus. In the case of coffee shipped by growers the growers would require to produce coupons for delivery to Customs at the time of shipment. This method of collecting the cess from producers would not be absolutely watertight as coupons would in course of time be liberated by consumption in India and might be re-used. No really satisfactory method of dealing with this difficulty has been suggested, but it might be controlled to some extent by the dating of coupons and there is the further possibility of prohibiting the possession of coupons in excess of coffee stocks held.

The legislation would also have to provide for the increase in Customs duty on all coffee, including re-imported Indian coffee, to the rate of the export bonus. This increased Customs duty would have to apply to coffee from Burma.

COFFEE RESEARCH IN TANGANYIKA

The Fifth Annual Report of the Coffee Research and Experiment Station, Lyamungu, 1938, contains much of interest to South Indian planters and offers some illuminating contrasts with work in progress at Balehonnur. It is true that the annual report, much beloved of governments and other institutions, is not a very satisfactory medium for reporting scientific work, since the greater part of it is planned over much longer periods of time, and the annual report provides a very unsatisfactory fragment of the story. It is necessary to follow such reports over a period of years to give a true picture of the progress made.

This report covers work conducted under five main heads,—the improvement of plant material, the improvement of growing conditions, vegetative propagation, soil investigations, plant pathology and entomology. Field experimental work under all these sections is carried out both at the experiment station and by means of co-operative experiments and recordings on private estates. The latter method has been developed to a much higher degree than has been the case in India, and after allowance has been made for the difficulties involved, it has proved extremely valuable. It has shown that there is no reason why experiments laid out on private estates should not be statistically sound, provided the lay out is not too complex, and sufficient assistance can be provided for recording. It is to be hoped that this type of work may be extended in India, at least when conditions become more normal again. A beginning has been made on a more satisfactory basis than in the past, in the co-operative experiments laid out in connection with the Imperial Council of Agricultural Research Scheme on Coffee Quality.

As in India, great emphasis is placed on the importance of improving plant material, and this report records the completion of the first stage in this improvement—the selection of 5 coffee trees which have given a regular annual yield of approximately 1 ton of clean coffee of good quality.

per acre for five years. These five trees represent the best of a large number of trees originally selected and recorded. The next stage involves the testing of seedling progeny of these five selections and this has been commenced by the laying down of carefully designed field experiments in different coffee areas. At the same time, these trees are being propagated by vegetative methods.

It is interesting to note that in Tanganyika, it has been possible to base selection primarily on yield. Over large areas in S. India, on the other hand, it is evident that yield is largely determined by Leaf Disease susceptibility and it has been necessary to select primarily for disease resistance. This has involved rather different lines of approach from those found suitable in Tanganyika. Of course, the final aim is identical, but the limiting factors are different in the two countries. In both cases, the work has involved the examination of large numbers of plants and the gradual elimination of the less suitable until work is concentrated on only a few outstanding trees. In Tanganyika five high yielding trees, satisfactory in other respects, provide material for further work. At Balehonnur, four trees showing a high degree of disease resistance provide our main material for further work.

Very substantial progress is recorded in connection with the rooting of cuttings and the results undoubtedly afford considerable promise for the future.

Much of the work under improvement of growing conditions is of interest to S. India. In a country like India, where coffee growing is a relatively old industry, many methods are accepted as having stood the test of experience, so that experiment is regarded as superfluous. It is good to be reminded by work in other countries that old established practices are worthy of critical test by the more vigorous methods of modern agricultural research. This is provided by the work here recorded on planting methods, cultivation and shade. Special attention must be drawn to the very striking results shown by mulching. In no other experiment, of which results are recorded, is there anything like the effects shown by this work. There is a very obvious need for more extensive work in India along a number of lines being followed in Tanganyika.

The section on plant pathology contains an account of work on the control of *Hemileia vastatrix* under Tanganyika conditions, with full strength and half strength Bordeaux mixture and with copper oxide preparations. The results, as far as they go, favour Bordeaux mixture.

It is only the entomological section that we find little of direct practical interest to S. Indian planters. The pests studied—Leaf-miners, Antestia and Thrips—either do not occur or do not reach the status of pests in this country. At the same time, there are a number of points of technical interest, especially with regard to methods of approach to problems of insect populations.

In conclusion, it is of interest to compare the expenditure and organisation for coffee research in the two countries. In Tanganyika, with a coffee acreage of some 90,000 acres, the Colonial Development Fund and the Agricultural Department provide approximately £5,000 and the latter also lend the services of three European Officers almost wholly for coffee work which must represent at least a further £2,500. The total may be taken as roughly equal to one lac of rupees. India's treatment of coffee research is on a much more meagre scale, for with double the acreage under the crop, the total expenditure, including that of the Mysore Coffee Experiment Station, the U.P.A.S.I. Coffee Scientific Department and the Imperial Council of Agricultural Research grant for the quality scheme amounts only to some Rs. 70,000 per annum. Even when due allowance is made for the resources of cheaper staff in India, the comparison still cannot be said to be favourable to this country. The number of graduate officers directly concerned with coffee research is one less in India than in Tanganyika, and the staff available for recording work is much less, judging by the figure for this item in the accounts. It may also be mentioned that whereas in Tanganyika, the whole cost is borne either by the Colonial Development Fund or the general Agricultural Department budget, in India the planter contributes over 25% of the cost either by a special cess or by voluntary contribution. It is clear that the scientific effort made for this industry in India is not comparable with that of Tanganyika, and similar remarks might be made in relation to Kenya and India in this respect. In modern times, when the survival of industries depends on high technical efficiency, the situation in this country cannot be regarded with complacency.

W. WILSON MAYNE,
U.P.A.S.I. Coffee Scientific Officer.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

The President of the U.P.A.S.I. issued a circular to all members of the Southern India Planters' Benevolent Fund dated 24th June conveying the pleasant information that a gentleman in South India, who prefers at present to remain anonymous, had offered to give Rs. 15,000 to the Fund on condition that another Rs. 15,000 was subscribed by others apart from all normal subscriptions and donations. The offer was open until the end of 1940, but the donor has most kindly extended the date to the 31st of March 1941. He has intimated however that this is final and that unless Rs. 15,000 is subscribed by that date, his own offer falls to the ground.

This is a most generous offer, and in spite of the many calls on members in connection with the war we are sure that the condition attached to it will be fulfilled by the appointed day. Up to the present subscriptions (promised or paid) have been received amounting to Rs. 5,667 and a list of subscribers is given below.

The number of members of the Southern India Planters' Benevolent Fund is at present 369. The amount now to be raised is Rs. 9,333 and there is approximately six months in which to raise it.

It has been pointed out that the accounts of the Fund show a credit balance at the end of the last financial year. This is no doubt true. Claims fluctuate, and there have been debit balances in the past. It is more than likely that claims on the Fund will increase after the war. Indeed the Executive Committee of the U.P.A.S.I. have laid it down that 25% of all subscriptions and donations to the U.P.A.S.I. War Fund are to be set apart for the benefit of the dependants of planters who may need help as a result of service in His Majesty's Armed Forces. The Benevolent Fund has a wider application, and in the economic adjustments which will take place as a result of the present struggle, there may be many who will fall by the way-side, and thus need its assistance. We therefore appeal to all members of the Fund and to all others, whether individuals, firms or companies, to assist in raising the remaining Rs. 9,333 by the end of March, and so entitle the Fund to receive the generous gift now offered. Rs. 30,000 will be a splendid addition to the resources of our benevolence.

Subscriptions Promised or Paid

	RS	A	P
Mr. E. N. House	150	0	0
,, T. D. Cardale	25	0	0
,, R. Walker	20	0	0
,, R. M. Greig	50	0	0
,, H. Gerry	20	0	0
,, C. W. Hickson	20	0	0
,, B. Henney	20	0	0
,, D. A. Sladen	20	0	0
,, R. Fowke	100	0	0
,, J. A. Gwynne	100	0	0
,, E. Sydenham-Clarke	50	0	0
,, W. Watters	50	0	0
,, K. J. H. Mackenzie	25	0	0
,, J. S. Youngman	25	0	0
,, D. I. Gardiner	20	0	0
,, B. D. Darkin	20	0	0
,, G. H. Waters	20	0	0
,, J. R. N. Thomson	20	0	0
,, G. B. Reade	25	0	0
,, C. L. J. Humphreys	10	0	0
,, A. G. Macgregor	20	0	0
,, K. M. Ross	20	0	0
,, A. B. Spence	20	0	0
,, W. A. J. Milner	60	0	0
,, R. M. Saywell	50	0	0
,, J. E. Sampson	25	0	0
,, E. L. Koechlin	100	0	0
,, D. S. McIntyre	20	0	0
,, A. S. Robertson	20	0	0
,, R. B. Cullen	30	0	0
,, J. Doig	25	0	0
,, J. Gray	50	0	0
,, R. S. Imray	10	0	0
,, M. W. Mackay	100	0	0
,, E. H. Francis	250	0	0
,, E. G. Cameron	50	0	0
,, R. N. W. Jodrell	25	0	0
,, N. B. Hartley	25	0	0
,, W. H. N. Knight	10	0	0
,, T. W. U. Park	15	0	0
,, R. M. Hay	20	0	0
,, G. C. Jack	20	0	0
,, P. E. Warne	20	0	0
,, C. K. Olney	40	0	0
,, R. I. M. Duncan	20	0	0
,, W. S. S. Mackay	12	0	0
,, H. Kirby	20	0	0
,, P. E. D. Cameron	25	0	0
,, J. M. Robertson	10	0	0
,, A. J. E. Steven	20	0	0
,, S. G. Speer	10	0	0
,, C. H. Mitchell	25	0	0
,, C. R. Jessop	20	0	0
,, F. N. Betts	20	0	0
,, R. C. Lake	20	0	0
,, J. S. Nicholson	20	0	0
,, H. A. Boas	20	0	0
,, Ivor Bull	100	0	0
,, L. P. Kent	100	0	0
,, G. Rowson	100	0	0
,, E. H. Young	100	0	0
,, G. R. Simpson	20	0	0
Col. W. L. Crawford	250	0	0
Mr. G. Scotland	15	0	0
Mr. R. M. Lawson	20	0	0
,, F. Hawkings	20	0	0
,, R. S. Creed	20	0	0
,, J. R. Phillips	20	0	0
,, H. R. Lindsay	20	0	0
,, I. N. James	20	0	0
,, H. Watson	50	0	0
,, S. H. Dean	20	0	0
,, W. M. Slowan	10	0	0
,, N. Johnston	25	0	0
,, P. W. Davis	20	0	0
,, O. J. Egan-Wyer	10	0	0
,, F. C. O'Hara	20	0	0
,, B. H. Mathews	40	0	0
,, A. D. Vincent	20	0	0
,, P. A. Naylor	20	0	0
,, S. P. O. D. Tipping	20	0	0
,, C. Vernede	30	0	0
,, G. D. Marr	20	0	0
,, C. M. Wilson	25	0	0
,, Ian McTear	40	0	0
,, N. G. Dysart	20	0	0
,, P. Dove	20	0	0
,, S. A. Minkley	20	0	0
,, E. C. Sherman	40	0	0
,, J. H. Alexander	30	0	0
,, H. B. Macpherson	20	0	0
,, R. Radcliffe	20	0	0
,, J. W. G. Phillips	20	0	0
,, F. J. B. Diaper	20	0	0
,, J. R. N. Pryde	50	0	0
,, R. R. Tewson	20	0	0
,, H. C. Boyd	30	0	0
,, J. D. Dickinson	50	0	0
,, G. V. R. Frend	75	0	0
,, C. S. Crawford	250	0	0
,, W. A. Holmes	10	0	0
,, D. M. Webb	25	0	0
,, F. F. Radford	20	0	0
,, S. C. Vaux	10	0	0
,, R. Lescher	20	0	0
,, A. L. Hill	150	0	0
,, G. H. Stevenage	25	0	0
,, St. John Hunt	50	0	0
,, N. Kirwan	100	0	0
,, B. St. J. Boultbee	50	0	0
,, C. C. Metcalfe	25	0	0
,, D. M. McIntyre	15	0	0
,, F. A. G. Ratcliffe	50	6	0
Coovercolly Group	35	0	0
Santagherry Estate	15	0	0
Woodbriar Estate	50	0	0
Chembra Peak Estates	100	0	0
Sutton and Louisiana Estates.	300	0	0
Honnametti Estate	100	0	0
Cochin Malabar Estates	100	0	0
Thirumbadi Rubber Co.	100	0	0
Vellamalai Tea Co.	100	0	0
Peria Karamalai Tea and Produce Co.	100	0	0
Arabidacool Estate	100	0	0
Kurkenmutty Estate	50	0	0
Merthikhan Estate	50	0	0
Honeyvale Estate	50	0	0

THERE AND HERE

The following interesting notes appeared in the 'MIK' Column of *The Statesman* dated 5-9-40:—

At the present time there are two luxuries that we regard as every day necessities that were quite unknown in the middle ages. I refer to tea and coffee and one is inclined to wonder what folks had to drink with their meals, unless everybody liked beer, which, of course, was to be had in plenty. Sugar was brought to Europe by the Crusaders, but it was an expensive luxury. Coffee and tea on the other hand came a good deal later, except, of course, that tea was known to the Chinese from the earliest times in common with astronomy, printing and all sorts of things for which we modern people take the credit.

How coffee first came to be known is something of a riddle. A man told me once that the Queen of Sheba took coffee to King Solomon. How he knew, or what was his authority, I have no idea. He and I used to sit together at one of the American cloth covered tables in the British Museum and he appeared to have a very general store of knowledge. Anyway it says in the Bible 'neither was there any such spice as the Queen of Sheba gave King Solomon'. I am not at all clear where the Queen of Sheba came from. There were two Shebas in those days; one was on the Straits of Bab-el-Mandeb and the other also in Arabia but on the Persian Gulf. But most authorities agree that coffee originated in Ethiopia and was carried to Arabia about A.D. 1400. Yemen was its first home and for two centuries the entire supply of the world came from that region. Even today the celebrated Mocha comes from Yemen. Digressing a moment I think that when makers of cross word puzzles die, if they have been good, they will go to Yemen and ride about on emus. Solvers of cross word puzzles will appreciate my point.

Coffee came to Vienna in a curious way. In 1683 Vienna was closely besieged by the Turks. Relief came when the City was in the last straits; a young Pole named Franz George Kolschitzky disguised himself as a Turkish soldier, made his way through the enemy's lines and brought the relieving army that saved Vienna. The Turks fled in utter rout leaving great amounts of stores, among which were sacks of strange beans which the people thought were camel fodder and started to burn. Kolschitzky happened to be near and recognized by the smell that they were burning coffee. He begged them to stop and to give him the coffee beans as a reward for his services, which was done and with the beans he started a coffee shop and made his fortune. A statue to Kolschitzky stands in Vienna to this day. I have seen it. He holds in one hand a coffee pot and in the other a tray on which are several cups.

Apparently coffee was known in France earlier than the event I have just narrated. And somewhere about 1700 there was opened a celebrated coffee house in Paris, Procope's. This was the gathering place of the most famous actors, authors and musicians of France, Among its famous patrons were Voltaire and all the revolutionary leaders, as Danton, Marat and Robespierre. More famous than all these was an unknown artillery officer in a shabby uniform; his name was Napoleon Bonaparte.

The coffee houses in England during the seventeenth and eighteenth centuries were intimately associated with English history. Perhaps the most famous was Will's, the favourite resort of the poet Dryden, and of Addison and Steele. The great English under-writing organization of Lloyd's started as a London coffee house. Birch's in Cornhill was I believe a coffee house at the outset and its quaint green front was a familiar sight to Londoners for many years. Lately it has had to make way for the march of commerce, but I believe the proprietors took away with them the original front.

Coffee is not so easily manipulated as tea and there have always been numberless devices for making a good brew. But a bad phase about coffee in England was the scandalous way in which it was adulterated. This became so notorious that a case was instituted against the manufacturers of a certain make of 'French Coffee'. How it ended I cannot say, after this long time, but the most extraordinary revelations came to light in the course of the case. Apparently there was little or no coffee at all used in the so-called 'French Coffee' but among the ingredients were baked horse's heart, lentils, venetian red, ropes, sawdust and flavouring essence. I remember the weekly paper *Fun* had a rhyme about it, which was really a parody on a popular song current at the time:

How do you like your coffee?
How much do you give a pound?
How do you like baked horse's heart
And lentils finely ground?
How do you like venetian red?
Ropes, sawdust, rags, and such?
How did you get that poison down?
And did it hurt you very much?

The scandal of the case bit deep and never since that day have adulterators dared to tamper with coffee. Chicory is allowed but only on a settled percentage.

The way coffee was introduced into the West Indies reads like a romance. A young French Naval Lieutenant named de Clieu had a romantic attachment for Martinique and determined to plant coffee there and add to its revenues. Accordingly he procured three seedlings from the public gardens in Paris and set out for Martinique. The voyage was terrible, they were attacked by pirates, blown out of their course by storms, they ran short of water and rationed to a minute quantity daily. Eventually the ship arrived and de Clieu had still one seedling, the other two had died. But that one was planted and thrived and from the original plant the cultivation of coffee spread.

PREVENTION OF SOIL EROSION ON TEA ESTATES IN SOUTH INDIA[1]

By J. D. Manning, B.Sc. (Agri.) (Edin.), U.P.A.S.I., Tea Scientific Officer, Nilgiris.

Introduction.—The object of my contribution to your discussions, is to describe, what steps have been and are being taken to prevent soil erosion on tea estates in S. India. In one way tea estates present a special problem, but what I have to say about anti-erosion measures, applies very largely to any form of hill cultivation.

Perhaps there are some of you not familiar with the tea industry in S. India, so I shall begin by saying that there are in Mysore, the Madras presidency and Travancore approximately 160,000 acres of tea. The chief districts in the Madras presidency are the Nilgiris, Wynaad and Anamallais. In Travancore state tea is grown on the Kanan Devan Hills or High Ranges and in South and Central Travancore. Mysore and Cochin states have a comparatively small acreage.

Under an international scheme of restriction, practically no new areas are now being planted and the figure of 160,000 acres, remains very constant. The area hardly falls at all because, odd as it may seem, it does not pay to abandon tea—even the worst tea. Practically the whole of the large acreage is situated on the hill sides and mountain slopes of the Western Ghats, and the plantations vary in elevation, from under 1,000 feet to well over 7,000 feet. Moreover, the tea is planted on land, sometimes very steep, which formerly carried medium to heavy jungle, though there is a certain amount of grass-land tea. Under virgin jungle or grass, the soil is so well protected that soil erosion hardly takes place. But as soon as such land is cleared for planting with a new crop, it immediately becomes liable to erosion, and from the very start the problem of erosion must be faced and tackled or else deterioration of land and crop takes place at a rapid pace. The problem is somewhat intensified because tea requires a fairly heavy rainfall, and in the tea districts we seldom have a rainfall of less than 50 inches per annum, and not unusually it goes to 200 inches and over. Most of this rain falls during the South West monsoon. You will appreciate then, that on hillsides and mountain slopes where there is a heavy rainfall, the prevention of erosion is a matter of the first importance, and particularly so, because tea is a perennial crop and with good treatment, we can expect the same plants to go on producing productive crop, for 70 years or more, provided they are well cared for.

Kinds of erosion.—Under the conditions which I have mentioned, three forms of erosion can take place: (i) erosion by wind; (ii) gully erosion and (iii) surface wash. The first of these is hardly a serious problem in tea estates; the second—gully erosion—is rather more serious, but chiefly we are concerned with erosion due to surface run-off. When this takes place, not only is the top soil gradually carried away, but with it the soil humus, the soluble nitrogen, the phosphates and potash. None of these valuable constituents we can afford to lose. In this short address, I shall confine myself very largely to erosion by surface run-off because as I have said, this is the type of erosion which presents the real problem.

Surface wash.—This surface run-off, takes place chiefly, when the rate of rainfall is greater than the amount of water, that can be absorbed by the soil, at the time of fall. So, unless protective measures are taken, we find during heavy rain that all excess water which is not immediately absorbed by the soil, rush down the slopes and carry with it constituents which make up the top soil.

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[1] Paper read at the Twenty-ninth College Day and Conference of the M.A.S.U., July 1940,

Principles of Protective Measures.—The greater the pace at which this water moves down the hill, over the surface, the larger is the quantity of soil that is washed away, so that, all efforts aimed at preventing erosion must be based on two chief principles. The first principle must be to render the soil as absorptive as possible so that it will rapidly absorb a large proportion of the water falling at any given time. The second step is to reduce to a minimum the rate at which any excess water can move over the soil surface. If a very large proportion of the rainfall is absorbed as it falls, and the excess can move but slowly, then erosion by surface run-off is reduced to a minimum. That represents the ideal set of conditions we should aim at, and now the problem is how to achieve those ideal conditions.

Increasing the absorptive capacity of the soil.—I shall first deal with the absorptive power of the soil. It is not possible immediately to change the type of soil but we must see that the soil is kept in good physical condition, has no hard pan either on or near the surface and is well drained. Its power of absorbing water should thus be raised to the maximum capacity. The periodical addition of organic matter, materially helps in increasing the power of absorption. Attention is paid to all these points on tea estates and by adopting them it has been possible to ensure that a large proportion of the heavy rainfall penetrates into the soil. But such methods, which after all are only good farming practices, are insufficient in themselves because during the time of heaviest rains and continual rainfall there is a certain amount of excess rainfall, and it is the steps, taken to deal with this latter mass of water (1″ of rain = 110 tons of water per acre) which finally decides how much erosion does take place.

There are several methods which decrease the speed of movement of excess water and thereby decrease the rate at which the surface soil can be moved. Moreover, the slower the movement of excess water over the soil surface, the more time there is for the soil to absorb this water.

Protective Measures.—The methods resorted to, on tea estates, are:—

(i) *Terracing.*—I expect you all will have seen terracing done at some time or other, and in any case it is adequately dealt with in many text-books. Terracing is most effective when it is so supported as to be permanent, and its main feature is, that it tends to convert a hill-side into a series of flats and thereby reduces the rate of surface run-off. It is effective, especially if done on contour, but it is an expensive method. Since we have other methods which are as good and somewhat less expensive, terracing is not a universal feature of South Indian tea estates.

(ii) *Maintaining surface drains.*—There are various systems of surface drainage and great use is made of such drainage systems in South Indian tea estates. One usually thinks of drains as being a means of carrying away water as quickly as possible, but for purposes of control of erosion their use has been modified so that the anti-erosion drains have come to mean drains which collect excess surface water, and move it off as slowly as possible. These drains really are very effective, and especially so, if they are not too far apart and are well designed so that water cannot travel far, over the soil surface before it reaches a drain, and when it does reach a drain the slope is so gradual that its rate of movement in the drains is reduced as far as possible. In many cases it is the custom to have ordinary surface drains well placed, gradually leading the water away, but more often than not, modifications have been made in the drains themselves to reduce still further the rate of water movement. One of these modifications entails digging 'silt pits' in the drains every few yards. This reduces the rate of movement, and facilitates deposition of silt in the pits. Later, the soil so collected, can be spread back, on the land from which it has come—always on the upper side of the drain. A second modification is what is known as a 'lock and step' drain. This is no more than an ordinary drain with a series of steps and locks whose purpose is to reduce the speed of water movement thereby allowing the soil carried by the water, to settle in the drains, eventually to be replaced on the land. There are still more modifications of this method but suffice now to say that these drainage systems are effective methods of preventing soil wash.

(iii) *Raising shade trees and cover crops.*—Finally, I want to mention what I consider to be the most effective method of controlling erosion. It amounts to no more than seeing that the soil is never bare and exposed. An exposed soil, subject to the heavy beating effect of rain, is most liable to erosion. Now it has become almost a fetish on tea estates to keep the land covered and this is done by growing shade trees—which break the fall of rain—and also by growing cover crops between the rows of tea or allowing soft weeds to grow. When by such practices the soil is completely covered on the surface and fully occupied by the root systems of plants, erosion is reduced to a minimum, and it is perhaps the only real way, how the problem can be tackled effectively. I know it sounds all wrong and looks untidy to have a cover of weeds growing amidst tea, and we do know that their presence reduces yield by 5 to 10 per cent. But so much importance is placed on preventing any kind of erosion, that most planters are prepared to sacrifice this loss of yield, to keep their soil intact. Eventually, of course, it pays a handsome dividend to do so. Unlike the annual crops, tea is a crop which can stand a certain amount of weed growth and cover crop, provided always that the weeds are never allowed get out of control and that any harmful weeds are always removed.

Conclusion.—It is by a combination of these methods that the problem of soil erosion is being tackled on tea estates in S. India today, and I think I can truly claim for the planters that not only do they realise their responsibility in this direction, but that they have studied the problem intelligently and are putting into practice the most effective measures. After all it amounts to nothing less than that—and it is the message which I should like to leave with you today—there are two ways of managing land, viz. either you can (*a*) *mine* it—take from it all it will give and take no care for the future; or you can (*b*) *farm* it—treat it intelligently as a living and lasting thing and realise that the land and yourself have a future to think of. Be always suspicious of erosion—it goes on much more rapidly than one would believe by appearances. Regard it as a major problem.

—Reprinted from the 'Madras Agricultural Journal', Vol. xxviii, *No.* 7, *July* 1940.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 31st August were:—

Rubber, including export licenses ...	58.00 cents a lb.
Rubber Export Quota	8.50 cents a lb.
1st quality rubber alone	50.00 cents a lb.

FERTILIZER SUPPLY DURING WAR-TIME

By V. A. Beckley, M.C., M.A., Senior Agricultural Chemist, Kenya Department of Agriculture.

The use of manures and fertilizers in Kenya is still only in its infancy. The coffee industry as a whole uses a fair quantity of both organic manures and the concentrated chemical fertilizers; the cereal farmers generally much less. However, many coffee planters and some cereal farmers have evolved definite manurial programmes. Under normal conditions the dealers in fertilizers carry stocks adequate to meet the ordinary demands and, should an extraordinary demand arise, such as that caused by the recent severe coffee thrips infestation, were able rapidly to replenish stocks by cable orders. Today, matters are rather different and one has to look around for substitutes.

The main nitrogenous fertilizer used is sulphate of ammonia. A short while ago stocks were very low, but within the last week or two a shipment has arrived.

It can confidently be expected that prices will be appreciably higher; first costs will be greater, while freights and insurance have gone up considerably. It is certain that there will not be a free export of sulphate of ammonia from Great Britain; so much of the combined nitrogen manufactured will be absorbed in munitions. It is probable that part of the agricultural quota will be available for export when the home demand is light. It is also probable that a certain amount may be available from South Africa. One thing that is certain is that the quality will not depreciate as was the case during the last war. One sample seen by the writer then was coloured brown and contained so much tar acids that an application of it to cereals would do more harm than good.

Alleviating the position is the increasing use made of by-products and wastes. From the Nairobi Abattoir comes an appreciably good quantity of blood meal and carcass meal, and from Messrs. Liebig's (Kenya) Limited a greater quantity of slaughterhouse by-products such as blood meal, hoof and horn meal, meat meal, etc. The quantities available are insufficient to meet present demands and, moreover, some of the products are valued as feeding stuffs. The unit values of nitrogen in these products are usually higher than in sulphate of ammonia, but, because of certain inherent characteristics, perhaps worth the extra. Blood meal is nearly as quick-acting as sulphate of ammonia, but leaves no acid residue in the soil; hoof and horn meal is fairly quick-acting and a fair proportion of the nitrogen is slow-acting; a definite advantage with permanent crops.

Other industrial wastes are becoming available as manures. Wastes from fisheries on Lake Nyanza are being produced, but here again the possibility of using fish meal as a feed may reduce its availability as a manure. Another group of wastes from a Lake Victoria industry will help, these are crocodile products, meat meal and scale meal, both of which are valuable manures. There may also be a certain amount of leather waste meal produced. All of these by-products help reduce the demand for imported nitrogen, but they are far from satisfying even a small fraction of the demand.

As regards phosphates the position is easier. The coffee industry uses mainly bone meal, the potential supply of which at present exceeds the demand. Seychelles guano is easily obtainable. As far as can be ascertained, during the past few months there has been a considerable increase in the importation, so stocks should be ample. The superphosphate position will be difficult. A great proportion of our supplies was drawn from foreign sources, which may not or cannot be tapped at present, but it is highly probable that the wheat growers may get almost as good results from the use of bone meal and Seychelles guano.

So far, practically all the potash salts imported into Kenya are of German origin. There are Allied sources, but these will be needed to meet demands elsewhere. On the whole, there is very little need in Kenya for special potassic manuring, so agriculture will not suffer from lack of potash. In the few cases where it is needed the deficiency can be met by the use of wood ash or maize cob ash.

There is a tendency on the part of some coffee growers to use compound manures, some of which are based on fish meal. It is to be feared that the supply of these will cease during the war period, and habitual users will have to look for substitutes. The most promising source lies in the slaughterhouse by-products.

It will become more and more necessary for planters and farmers to look to the waste products of their own farms for the maintenance of soil fertility. Although many farmers are using agricultural wastes in the form of composts, there are others who do not because they are afraid of heavy expense. Composting need not be expensive, though it can be made so, and the returns more than compensate for the cost. A Kenya farmer made between 1,300 and 1,500 tons of compost in 1937-38, which was placed on 130 acres at a total cost of *Sh.* 5/50 per acre. He reckons that during the first year alone, after manuring, his profit was *Sh.* 21 per acre (1). Others have done as well.

The principles of composting should now be well known. Sir Albert Howard's book, *The Waste Products of Agriculture*, is in many farm libraries. The principles, as applicable generally to Kenya conditions, have been described (2) (3), and the application of the principles to particular conditions have formed the subject of several articles in this Journal (4) (5) (6) (7), so it should not be necessary to traverse the subject again.

The whole secret of success in making compost cheaply is the adaptation of the basal principles to the conditions and materials. Slavishly following a detailed schedule of mixing, watering and turning, worked out for one set of conditions, is certainly going to increase the cost. While it may be economic on a small peasant holding to collect weeds from the fields for composting, it is foolish to do so on a large coffee plantation; the weeds will decompose *in situ* without detriment, and seeds will be left to continue the succession.

Cost does not involve only the actual labour, but capital outlay may constitute the greater part. To produce a superlative compost will involve a lot of labour mixing up the wastes, transporting them to and from the cow-byres, watering and turning at the stated intervals, but also the provision of a proper water supply at the composting site. Such a compost may well cost *Sh.* 15 per ton. On the other hand, 'rainwater compost', where labour requirements are reduced to a minimum and there is little if any capital expenditure, will give a less perfect product but the cost will be about one-tenth of the other. Equal applications of the two will not differ greatly in their effect; the increase in the one case may cover the costs, in the other it will yield a handsome profit. Better an ample supply of a poor compost than a meagre supply of a superlative.

With the increasing swing-over to mixed farming, the production of larger and larger supplies of compost will become easier. The crop wastes available at present are, in many cases, a liability. Proper use of them as bedding will enable the farmer to convert all the wastes into usable, valuable compost, and at the same time benefit his stock. It is not necessary to haul everything to a central point; often this would be uneconomical. Judicious planning is needed. One well-known farmer (7) combines his soil-conservation systems, stock *bomas* and composting into economic units.

The matter is not so simple on coffee plantations. Many are able to plant heavy-yielding crops on part of their estates to provide the bulk material for composting, but many more have no spare land for the purpose. The only waste product is the pulp, not an easy material to compost alone, and in any case insufficient to meet the needs. A lot can be done by proper use of the weed growth. At the onset of the rains more plant nutrients are rendered available than can be utilized by the crop, and a great proportion of the nitrates may be leached down beyond the reach of the roots. A good growth of weeds is capable of utilizing much of this surplus, and putting it into storage, as it were; one common weed, pigweed (*Amaranthus* sp.), takes up far more nitrates than it can use. If now the weeds are lopped or turned in while still young, before most of the nutrients taken up are stored in seeds and before they become woody, decomposition will proceed without detriment to the main crop. If left too late, much of the nutrients will be locked up and, during the preliminary decomposition of the woody residues, there may be a heavy demand on the available plant nutrients in the soil, to the detriment of the crop. The underlying concept in the composting of crop residues is the reduction of the woody residues, so that on application to the soil further decomposition will not involve depletion of the available nutrients. Careful utilization in this manner of heavy weed growth should enable those planters, who are lucky enough to have their soil in such trim as to carry a heavy weed growth, to pass through the war years without needing to purchase large quantities of imported fertilizers and thus to leave more of their more unfortunate neighbours.

It is possible to convert all town wastes into valuable manures. This has been done in India for years, and is now being done by municipalities and boroughs in Great Britain. Even in Nairobi we have a compost factory that is quoted as an object lesson. The question is how far would it be possible for such composts to be used. They are bulky, and will stand but little cost of transport before becoming uneconomic. However, the potentialities must not be overlooked. The careful uitlization of locally available products, the composting of farm wastes, and, when economic, the conversion of town refuse into manure will go a long way towards meeting the demand of the Colony for manures and fertilizers.

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—*East African Agricultural Journal.*

INDIAN TEA MARKET EXPANSION BOARD

Minutes of a Meeting of the South Indian Tea Market Expansion Board Advisory Committee, held on 6th August, 1940, at 1 p.m., at the Coonoor Club.

Present.

Mr. W. A. J. Milner, Mr. R. Fowke, Mr. P. J. Griffiths, I.C.S. (Rtd.), *Vice-Chairman*, I.T.M.E.B.

The Minutes of the last meeting were confirmed.

It was decided to refer to the I.T.A. and U.P.A.S.I. Tea Scientific Departments for suggestions re. the possibility of strengthening the standard of quality for teas, so that imitation teas and teas made from factory red leaf and tea waste could be brought under it.

With regard to Travancore tea adulteration, Mr. Miles was to be asked to see the Travancore Public Health authorities and ascertain if extra staff appointed by I.T.M.E.B. would be of assistance to the Public Analyst (if now appointed) in detecting cases of tea adulteration.

Article in 'Planters' Chronicle' on creating demand for finer kinds of tea: Mr. Griffiths kindly consented to draft a reply for publication in the *Planters' Chronicle.*

Sri Chithra Exhibition.—Mr. Milner hoped that the Commissioner would be able to arrange for an I.T.M.E.B. stall at this Exhibition as has been arranged in previous years.

Association of Planters of Travancore Meeting August 30.—Mr. Milner stated that Mr. Miles hoped to be able to attend this Meeting but that pressure of other work might prevent him.

Free Tea to Troops.—The suggestion made in Mr. Milner's letter of 22nd July to I.T.M.E.B. would be considered and a reply sent at as early a date as possible.

Expansion of Urban Propaganda Work in S. India.—Mr. Griffiths stated that in addition to Trichinopoly one other town would be worked if possible.

W. A. J. MILNER,
Chairman.

TEA FOR RUSSIA

In connection with the desire of the Soviet Government to reopen trade talks with the Government of the United Kingdom, it is pointed out by 'Capital', of Calcutta, that amongst the several commodities which Russia would like to purchase are tea and rubber. In recent years imports of tea into the Soviet Union have been remarkably small. In 1936 no more than 27,000,000 lb. were taken in, and in 1938 just under 37,000,000 lb., compared with 65,000,000 lb. imported ten years earlier. Russian imports of rubber were reduced from 47,300 tons in 1934 to 26,800 tons in 1938, and were probably still less in 1939. There might be little risk in supplying limited quantities of Indian and Ceylon tea to Russia, but the supply of rubber might seriously affect the blockade of Germany. Apart from the fact that the Soviet Union is deriving a large and increasing portion of its rubber requirements from three distinct synthetic processes, it has obtained at least 10,000 tons of natural rubber from the United States and smaller quantities from the Dutch East Indies since the beginning of this year. The margin between these imports and the actual Russian requirements appears to be too narrow to suggest that further supplies could be released without risk.

BOARD OF COMMUNICATIONS

W. K. M. Langley, O.B.E., M.L.A., has been nominated to represent the U.P.A.S.I. on the Board of Communications, Madras, in place of Mr. A. G. Acaster.

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE *From* 1-1-1940 *to* 30-4-1940.	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
Madras	4	...	20	687	...	...	...	711	110
Calicut	...	11,277	1,361	200	...	910	914	14,662	...
Cochin	...	3,082	...	70	...	...	271	3,423	...
Mangalore	...	16,684	14,209	11,771	200	925	3,733	47,522	...
Tellicherry	...	2,451	...	...	...	...	659	3,110	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	59	...	...	...	...	...	...	59	...
Total ...	63	33,495	15,591	12,754	200	1,835	5,577	69,515	110
RUBBER *From* 1-1-1940 *to* 30-4-1940.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Calicut	1,79,168	3,07,171	...	...	...	7,79,520	...	12,65,859	...
Cochin	9,05,107	34,20,776	1,75,392	22,400	...	10,60,256	...	55,83,931	...
Mangalore	5,097	45,472	...	...	...	49,280	...	99,849	...
Tuticorin	1,06,148	4,480	...	...	...	...	...	1,10,628	...
Alleppey	1,71,560	1,79,200	...	56,000	...	5,09,600	...	9,16,360	1,66,208
Total ...	13,67,080	39,57,099	1,75,392	78,400	...	23,98,656	...	79,76,627	1,66,208
TEA *From* 1-4-1940 *to* 30-4-1940.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Madras	...	13,599	...	100	...	...	...	13,699	1,000
Calicut	7,229	15,61,895	...	...	...	43,930	333	16,13,387	...
Cochin	2,10,051	30,72,841	...	...	...	1,19,186	1,500	34,03,578	6,548
Mangalore	...	25,483	...	...	...	...	...	25,483	15,040
Tellicherry	...	...	...	...	...	...	...	...	139
Tuticorin	15,736	3,11,403	...	...	...	...	...	3,27,139	...
Dhanushkodi	1,37,623	...	...	...	...	...	...	1,37,623	...
Total ...	3,70,639	49,85,221	...	100	...	1,63,116	1,833	55,20,909	22,727

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1940 *to* 31-5-1940									
Madras	4	...	20	823	...	...	...	847	112
Calicut	...	11,300	1,529	200	...	910	914	14,853	...
Cochin	...	3,312	501	70	...	...	271	4,154	...
Mangalore	...	16,684	15,451	15,036	200	925	4,074	52,370	...
Tellicherry	...	2,452	...	...	...	...	659	3,111	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	79	...	...	...	...	...	...	79	...
Total ...	83	33,749	17,502	16,155	200	1,835	5,918	75,442	112
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1940 *to* 31-5-1940									
Calicut	1,79,168	3,61,827	...	...	...	7,79,520	...	13,20,515	...
Cochin	10,74,520	49,25,526	1,80,392	66,304	...	13,48,768	...	75,95,510	...
Mangalore	5,097	69,216	...	...	...	49,280	...	1,23,593	...
Tuticorin	1,25,638	8,960	...	...	...	...	...	1,34,598	...
Alleppey	1,71,560	1,79,200	...	56,000	...	5,09,600	...	9,16,360	1,66,208
Total ...	15,55,983	55,44,729	1,80,392	1,22,304	...	26,87,168	...	1,00,90,576	1,66,208
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1940 *to* 31-5-1940									
Madras	...	32,907	...	1,560	...	...	...	34,467	11,000
Calicut	7,229	26,38,114	...	...	...	43,930	333	26,89,606	29,968
Cochin	4,91,479	62,78,104	...	...	...	2,90,885	1,500	70,61,968	6,598
Mangalore	...	48,597	...	...	...	...	...	48,597	23,935
Tellicherry	...	2,41,361	...	...	...	...	...	2,41,361	503
Tuticorin	39,168	4,98,652	...	...	...	...	...	5,37,820	...
Dhanushkodi	1,48,003	...	...	...	...	...	...	1,48,003	...
Total ...	6,85,879	97,37,735	...	1,560	...	3,34,815	1,833	1,07,61,822	72,004

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1940 *to* 30-6-1940									
Madras	4	...	20	908	...	...	...	932	112
Calicut	...	11,300	1,529	200	...	910	914	14,853	...
Cochin	...	4,585	15,148	70	...	...	741	20,544	...
Mangalore	...	16,684	15,451	15,036	200	925	4,074	52,370	...
Tellicherry	...	2,452	...	64	...	...	659	3,175	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	99	...	...	...	...	...	...	99	...
Total ...	103	35,022	32,149	16,304	200	1,835	6,388	92,001	112
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1940 *to* 30-6-1940									
Calicut	1,79,168	3,61,827	...	...	...	7,79,520	...	13,20,515	...
Cochin	13,62,859	64,30,228	1,85,392	68,323	43,904	13,48,768	...	94,39,474	...
Mangalore	5,097	69,216	...	...	...	49,280	...	1,23,593	...
Tuticorin	1,92,420	8,960	...	...	...	...	...	2,01,380	...
Alleppey	1,71,560	1,79,200	...	56,000	...	5,09,600	...	9,16,360	1,66,208
Total ...	19,11,104	70,49,431	1,85,392	1,24,323	43,904	26,87,168	...	1,20,01,322	1,66,208
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1940 *to* 30-6-1940									
Madras	...	78,979	...	1,560	...	...	...	80,539	11,000
Calicut	7,229	28,07,220	...	...	...	43,930	333	28,58,712	32,948
Cochin	6,50,831	1,16,24,872	...	408	...	4,40,516	1,500	1,27,18,127	9,538
Mangalore	...	48,597	...	...	...	...	...	48,597	38,432
Tellicherry	...	2,41,361	...	...	...	...	...	2,41,361	503
Tuticorin	49,172	9,55,891	...	...	...	...	...	10,05,063	...
Dhanushkodi	1,79,543	...	...	...	...	...	...	1,79,543	...
Total ...	8,86,775	1,57,56,920	...	1,968	...	4,84,446	1,833	1,71,31,942	92,421

MARKET REPORT AND PRICES

The Calcutta Market

(Extracts from the Calcutta Tea Brokers' Association Reports.)

Sales Nos. 11 and 12 were held on 26th and 27th August and 2nd and 3rd September 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 11	Sale No. 12	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	12 5	12 3	12 0	10 2	9 8
For Internal Consumption:—					
Leaf Teas ...	3 9	3 7	3 10	4 0	4 0
Dusts ...	4 7	4 5	4 9	3 10	4 2
Green Teas ...	6 9	6 7	6 8	5 5	...

RUBBER.—London on September 10, 1940, 12¼*d.*

The Colombo Market

(Issued by the Colombo Brokers' Association.)

Average prices obtained (in cents.)

South Indian Tea

	Sales on Aug. 27 & Sep. 3, 1940
Heaven Valley ...	... 53
Malakiparai ...	... 70

Rubber

	Sale on Aug. 29, 1940
Ribbed Smoked Sheet ...	55¾
Contract Crepe	51¾
Mottled Brown Latex Crepe	47 to 51
Brown Scrap Crepe ...	45½

The Madras Market

Current on 12th September, 1940.

Indian stock markets during the fortnight have continued to rule very steady. Government security market shows renewed strength and 3½% has advanced to Rs. 90-6 as. Other loans have shown proportionate gains. Mysore loans in particular have attracted strong support but business has been almost impossible to negotiate in view of the entire absence of sellers even well above prices bid. Since our last report, intermarket leaders such as Indian Irons and Bengal Steel Corps. have shown considerable gains, the former advancing from around Rs. 26 to Rs. 29 cum the dividend of Re. 1-4 as. The latter from Rs. 15 to Rs. 16-12 as. With regard to the local market proper, the general undertone is fully steady. In the majority of issues, sellers are reserved at current low prices. In several sections there has been a considerable increase in investment support and the market undertone is one in which good news from the theatre of war would be quickly reflected. These remarks are particularly apt to local rubber shares in which there are practically now no sellers over at quoted rates.

Rubber.—The price of Spot rubber in London has fluctuated throughout the period under review at around 12¼*d.* On Tuesday news was received that the export quota has again been revised, being now 90% until the end of the year as against the former 85%. The price for rubber in India is much the same, approximately 50 cents without coupon and 7 cents per lb. for the coupon. A wider range of business has been reported in local shares but as indicated above, in the absence of sellers, the turnover still remains restricted. Cochin Malabars were unchanged at Rs. 6 cum the dividend of 5%. Thirumbadis hardened to Re. 1-7 as. buyers, Re. 1-9 as. sellers, on the announcement of a 5% interim dividend. Improved enquiry was noticeable for the majority of companies under the managing agency of A. V. Thomas. Coorgs advanced to Rs. 25, Kalpettas were bid up to Rs. 16 cum dividend. Velliamuttams also advanced to Rs. 16. Midlands were firmer at Rs. 4-8 as. Among others, Malankaras attracted attention at Rs. 29 cum dividend.

Tea.—Plenty of investment orders are in the market at lower levels but there is a marked discrepancy between buyers' and sellers' ideas of prices. Periakaramalais came to terms up to Rs. 16-8 as., while Peermades were also higher at Rs. 23-12 as. ex dividend. Highland Produce were wanted at Rs. 24-4 as. Devasholas at Rs. 6 ex the interim dividend of 3%. Chembra Peaks were also higher at Rs. 3-1 anna ex dividend.

Among Fixed Interest Securities, Ouchterlony Valley 6% debentures changed hands at Rs. 102.

FORTNIGHTLY RAINFALL STATEMENT

August 18, 1940 *to August* 31, 1940—(*Inclusive*)

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	3·72	...	87·74	91·46
3. Kallar B'dge	5·83	...	103·84	109·67
4. Koney ...	N.R.	N.R.	88·92	88·92
8. Twyford ...	10·23	1·28	197·60	209·11
9. Pettimudi ...	20·10	2·43	258·77	281·30
10. Kalaar ...	20·86	7·65	191·81	220·32
11. Chittavurrai...	0·49	...	35·75	36·24
12. BODI'KANUR...	...	...	10·06	10·06
13. COCHIN ...	2·76	1·08	96·10	99·94
14. Mooply ...	5·11	1·45	106·37	112·93
15. Pachaimallai	7·27	1·17	105·98	114·42
16. Mudis ...	10·39	1·03	155·20	166·62
17. POLLACHI ...	1·59	...	23·50	25·09
18. Ropeway Waterfall ...	3·87	...	60·33	64·20
21. Kerala Estate	6·50	0·75	132·40	139·65
22. Naduvattam	9·95	2·24	79·31	91·50
24. Coonoor ...	0·04	...	26·47	26·51
25. Kotagiri ...	0·09	0·61	29·56	30·26
26. Ootacamund...	0·82	0·08	30·21	31·11
27. Yercaud ...	0·49	1·86	34·88	37·23
30. Devarshola T.E.S. ...	3·91	1·17	54·77	59·85
31. CALICUT ...	4·35	1·53	99·74	105·62
32. Kuttiyadi ...	8·53	2·03	102·50	113·06
33. Vayitri ...	13·31	2·56	129·56	145·43
34. Manantoddi...	10·06	2·56	88·88	101·50
35. Bilgiris ...	1·73	0·13	42·26	44·12
38. Pollibetta ...	3·35	1·01	52·38	56·74
39. Coovercolly ...	8·26	1·87	59·33	69·46
41. Kadamane ...	30·55	7·50	191·27	229·32
43. Merthisub'gey	14·75	4·09	94·80	113·64
45. Balehonnur ...	12·77	3·75	89·79	106·31
46. MANGALORE ...	8·75	3·28	113·80	125·83
47. MADRAS ...	0·38	1·39	11·52	13·29

N.R. = No Return Received.

Planters' Chronicle

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EDITORIAL

In our issue of September 14th we referred to a conference which had been convened by Sir A. Ramaswami Mudaliar, the Member of the Governor-General's Council in charge of Commerce and Labour, to discuss certain proposals for the war time control of the production and marketing of coffee. This conference met on the 18th and 19th September and, we are glad to say, came to a unanimous agreement on the measures which were desirable. A signed report of the recommendations of the conference is now being discussed by all those who concerned, and it is hoped that the remarkable unanimity which was reached at the conference will be maintained in the Associations and organizations which were represented there.

The control scheme which has been adopted in Kenya, and on which an article appears in this issue, strengthens the need for the early establishment of some form of control in this country. It is hoped, that, with the assistance of the governments of the States and Provinces in South India, the Government of India will take rapid steps to put into force the proposals which have been made, which involve as little interference as possible with normal trading, are administratively feasible, and above all are unanimously recommended. A tribute was paid to Sir Ramaswami Mudaliar at the conclusion of the conference, by Mr. W. K. M. Langley, for his interest in and remarkable knowledge of the special works of the industry.

* * * * * *

The attention of our readers is called to the fact that ground and roasted coffee is liable to sales tax when it is sold in the Madras Presidency by the grower or his agent. Coffee which is not roasted is treated as agricultural produce. Coffee which is roasted, however, is not treated as agricultural produce, but coffee sold in the form of roasted berries or powder is treated as a finished article of industrial manufacture, and though liable to tax, is entitled to a rebate of 50% of the tax payable.

* * * * * *

Lt.-Col. C. H. Brock, O.B.E., V.D., arrived in Coonoor on the 18th September and has taken over the duties of Secretary of the U.P.A.S.I. and Editor of the *Chronicle*.

WELL DONE!

Our readers will be interested to know that Acting Squadron Leader, Antony Bridgman, the son of Mr. J. M. Bridgman, one of the pioneers in the High Range who retired some years ago, was recently awarded the D.F.C. for gallant work with the R.A.F. The official note reads: 'While reconnoitring northern Denmark he discovered a large concentration of enemy aircraft at Aalborg. Three days later he successfully bombed this aerodrome under most adverse weather conditions and in face of intense opposition from the ground.'

Since then 'Tony' has been busy raiding Germany. Two other sons of Mr. Bridgman are also serving with His Majesty's Forces.

WAR RISKS (GOODS) INSURANCE SCHEME

PRESS COMMUNIQUE

Government of India, Commerce Department, Simla, 14-9-40.

Notifications have been published in the Gazette giving effect to the decision to introduce the War Risks (Goods) Insurance Scheme with effect from the 1st of October and to make insurance compulsory throughout British India with effect from the 1st of November. Any seller of goods situated in British India, who so wishes can therefore insure those goods against war risks at any time he likes on or after the 1st of October and will be compelled so to insure them after the 1st of November.

Insurance can be taken out through Insurance Companies dealing in fire insurance who are members of any of the six prescribed Associations. The names of such insurance companies and of the prescribed associations have been published in a notification in the Gazette and it is hoped that the names of the insurance companies concerned will be posted at treasuries and the larger post offices before the date of introduction of the scheme. These insurance companies have consented to act as Government Agents and will administer the scheme on behalf of Government receiving only from Government the actual cost of administration.

'War risks' are defined in the Rules framed under the Ordinance and, speaking generally, cover all damage caused by the enemy or in combating the enemy. Goods insurable under the scheme are all goods held for sale with exception of certain goods that are declared as non-insurable. Among non-insurable goods are growing crops, certain minerals and metals, works of art, jewellery, books and manuscripts (less than 50 years old) and mineral oils. Any insurance taken out must be taken out from the date of application up to the end of a quarter and the amount of cover taken cannot be reduced on a reduction in the amount of goods held. For the period up to December 31st premiums are payable at the rate of 1/32nd per cent for each month, or part of a month, for which cover is required and no cover can be given until the premium is paid.

COFFEE CONTROL IN KENYA

(Contributed)

The complete control of the coffee industry in Kenya has now been instituted. Its purpose is to secure the advantageous disposal and export of the crop. All stages of the industry, from the producer to the exporter, are subject to control by a Supply Board (Coffee Control), and in a commentary on the working of the scheme the monthly Bulletin of the Coffee Board of Kenya in its issue of July-August 1940 writes as follows:—

'With the closing of European markets and with heavy, if not absolute restriction of imports into the United Kingdom, the potential world consumption of coffee now stands at an abnormally low figure.

'The principal markets of the immediate future, in so far as Kenya is concerned, must be Canada and the United States of America, and it is essential that the industry, as a whole, should work in such a way as will enable it to satisfy the demands of these markets.'

No producer of coffee is allowed to sell the raw product except to the Supply Board or its accredited agents. Everyone who treats or cures coffee has to submit a statement of every consignment of coffee treated or cured, together with a sample of each grade, within forty-eight hours of the date of treating or curing. Everyone who has in his possession stocks of raw coffee, whether hulled, in parchment, or unhulled (cherry) in excess of one bag must send a return of stocks on hand as at the 23rd July 1940 to the Supply Board. This does not apply to coffee held on farms. All licensed dealers must send to the Supply Board within seven days a return of contracts existing on July 23rd 1940, detailing the quantity, price (where it is a sale), and the destination of the coffee concerned. Then all producers of coffee who have stocks of parchment of coffee in excess of ninety-five bags must deliver such ninety-five bags and anything in excess of that to a curing establishment for treatment. This does not, of course, prohibit producers from sending for curing their parchment coffee in smaller quantities than ninety-five bags.

When the coffee has been delivered to the Supply Board it is classified in accordance with a differential scale which is authorised by the Board. This scale establishes a differential of Shs. 20 per cwt. between A grade of fine and A grade of poor quality, and a differential of Shs. 45 per cwt. between fine A grade coffee and poorest T grade. This quality classification assures substantial premium payments to producers of better quality coffee. Their contribution to the pool will be greater in value than the contributions of producers of poor quality, and their return from the pool should therefore be on a similar basis.

The Supply Board in control of the crop will be able to meet the requirements of buyers, to take immediate advantage of offers, and to place forward contracts to a greater extent than was possible under a system of individual marketing. The pool as a whole will benefit from favourable sales and will carry the burden of less remunerative sales. Both exporter and producer will be protected from the losses which might otherwise be incurred as a result of market fluctuations.

Let us see how this scheme actually works in practice.

Planters despatch their coffee to the curing works through existing commission agents, who are actually firms licensed as coffee dealers and who have handled this type of business in the past. All payments by the Supply Board to planters will be made through the agents, through whom delivery is effected.

Curers are obliged to send a copy of outturn statement and samples of every parcel treated to the Board within forty-eight hours of curing. On these samples the coffee is classified by the Board and a receipt for the coffee, stating the quality, quantity and price class, is issued to the agent concerned together with a copy to be forwarded by the agent to the planter.

The Board has recommended a scale of initial payments to producers which are to be made upon all deliveries made to the Supply Board. Thereafter weekly payments will be made in respect of all coffee delivered and classified in each week. Final payment from the pool will be made at the end of the sale of the season's crop. All payments will be made on a basis *pro rata* to the quality of coffee received.

Planters holding stocks of parchment in excess of 95 bags were required by the Government Order to make immediate delivery to the curers. Planters with stocks of less than 95 bags, particularly those with small estates, were requested to make delivery as soon as they had reasonable quantities available. In order to facilitate handling and stacking in the curing establishments, consignments were, as far as possible, in multiples of 48 bags.

It has been arranged between the Supply Board and the curers that there should be a flat curing rate of Shs. 50 per ton of clean coffee treated, for the particular benefit of the smaller producer.

This is a rough description of the scheme which is now in force in Kenya, and is of special interest in view of the discussions which are now taking place in India with regard to some comparable measure of control during war time.

RUBBER DIVIDENDS

A feature of the annual reports now being issued by rubber companies is the substantial improvement in earnings and, to a lesser extent, the higher dividends distributed. Dividends have not increased in the same ratio as profits as the incidence of taxation makes heavy demands on earnings. Even heavier inroads will be made during the current year, as E.P.T. will swallow all profits above the datum line. The export quota for 1940 will average 82½ per cent., in comparison with 58¾ per cent. for 1939, so that, with a larger quantity of rubber to sell, and, so far, a higher sale, producers' earnings will increase still further during the current year. The contribution which the industry is making to the war effort by way of taxation and valuable foreign exchange is substantial. The limited participation by shareholders in the industry's high level of prosperity will be tempered by the knowledge that they also are playing their part in defeating Germany's endeavour to dominate the world.

—*T. & R. Mail.*

SOIL EROSION AND THE COFFEE INDUSTRY[1]

BY

W. W. Mayne, B.Sc., Coffee Scientific Officer, Balehonnur, Mysore.

I make no apology for addressing you today on the ecological conditions of coffee cultivation in South India, as they afford several interesting points on the management of hill lands under conditions of heavy rainfall; such areas, in fact, on which soil erosion is commonly seen in its most serious and spectacular form.

Coffee must be regarded as the oldest of the three main plantation crops in South India, its history as a plantation crop extending back to about 1840. Although many areas planted with coffee have been abandoned or given over to tea, there are considerable areas still producing satisfactory crops, which have been under cultivation for well over half a century. At least one estate in Mysore is known to me which has been under coffee for a hundred years and which still exists as a productive agricultural unit.

This feature of coffee cultivation in South India is perhaps more remarkable than appears at first sight. If we glance at the history of the great tropical 'permanent crops', we find that 'permanent' is perhaps hardly the right term. The coffee industry of Ceylon started and ended within half a century and left the succeeding tea industry with little more than a subsoil over considerable areas of the hills of Ceylon. In Brazil, the coffee industry has been based on the exploitation of fresh lands as the earlier plantations declined. Recent reports indicate that the great coffee industry which has grown up in Columbia in the last thirty or forty years is faced with declining production.

The other perennial crop industries in the wet tropics have hardly had time to show what degree of permanence they possess. The dangers inherent in such forms of agriculture are, however, sufficiently obvious now and there are clear signs of a realisation of their importance in agricultural practice. There still remains much to be done, not only in applying conservation methods already known, but in investigating the means of ensuring a stable agriculture in the large areas of evergreen and monsoon forest which have been opened up for the increased production of tropical commodities during the last half century.

I believe that the system of coffee cultivation in South India represents one solution of the problem of a stable agriculture under the topographical, pedological and climatic conditions of the coffee growing areas. It is, of course, a particular solution applicable only to coffee (and also to cardamoms) but an examination of one solution may not be without interest in considering the general problem of soil erosion. Further, the solution is only a partial one and there are many ways in which the situation ought to be improved. The fact that the system is one which greatly minimizes soil losses must not be allowed to obscure the existence of danger points which demand special measures.

Although the first essential of an enduring agriculture must be a stable surface soil, protected against the dangers of soil erosion, it is an interesting paradox that the measures, which in a high degree provide this protection for coffee, were not introduced for this purpose at all. The result is that a considerable degree of protection against soil erosion has been incidental and the coffee planter is less alive to the dangers that still exist in certain areas and under certain conditions than he should be.

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[1] Paper read at the Twenty-ninth College Day and Conference of the M.A.S.U., July 1940.

The system of cultivation in general use in South Indian coffee areas is, shortly, the culture of the crop plant under a continuous shade canopy, composed of a mixture of trees, many of which were constituents of the original plant association which had developed on the area prior to its cultivation. The mode of opening such land varies widely from a complete clearing of the original jungle and planting shade along with the coffee to the simple undergrowthing and light thinning of the taller trees to permit the development of the young plants. Nowadays, the debris is normally burnt, but in the early days of coffee planting, a number of estates were opened without burning. It is perhaps not without significance that several estates opened in this way in the early days of coffee planting still exist as sound productive units, with no visible signs of serious soil deterioration.

The cultural treatment of coffee is normally conditioned by this system of what might be described as undergrowth cultivation. Coffee planters place great store by the preservation of the surface mulch which is built up from the leaf fall from the shade canopy. Soil cultivation with implements is comparatively restricted after the establishment of the young plants, though in this respect there is much variation in estate practice, depending to a considerable degree on the slope of the land.

Under the shade, the coffee itself is planted closely, very much more closely than is normally the practice in other coffee growing countries, and the ground is covered by the coffee plants from a comparatively early age. From the point of view of soil erosion, this continuous shade canopy affords a very valuable protection against the beating action of the rain on the soil and at the same time reduces the effects of insolation in accelerating organic matter breakdown and reducing the soil's absorptive capacity for water. This protection is, of course, further increased by the continuous cover of the crop itself. Secondly the leaf fall from the shade provides a mulch which is of the utmost value, as has been shown by Lowdermilk in California, in reducing run-off considerably in excess of its absorptive capacity.

In mature coffee, therefore, erosion control is achieved to a considerable degree by natural methods—the utilization of a plant association approximating to quite a considerable degree to the natural vegetation of the areas, in which the crop is inserted, as it were. At the same time, it must be repeated that the value of the system has rarely been consciously attributed to its influence on the stability of the surface soil. This has resulted in a complete lack of recognition of the dangers which can arise from a failure to take additional precautionary measures under certain circumstances.

The main dangers arise in the early stages of opening land under coffee or in replanting old lands with new plants, and in the laying down of drainage which is frequently necessary. Under these conditions, the coffee industry has been slow to undertake conservation measures from a lack of understanding of the damage that can occur in a very short period of time.

Work in East Africa showed that in a coffee clearing on a slope of one in six under a rainfall of between 60 and 80 inches without any control measures, the loss of soil amounted to 38 tons in two years or about 2½ per cent of the top foot of the soil. There is no reason to believe that losses of the same order do not occur in South India in newly opened land as the shade affords small protection at this stage and the rainfall and slopes often exceed those experienced in the experiment in question.

It is rare to see any measures for erosion control in coffee clearing in this country; planting and working is carried out up and down the slope, felled trees lie across the contours, cover crops are very rarely seen and only very recently has any interest been aroused in the use of green manure plant hedges. In only one district, where slopes are exceptionally steep, are any attempts at terracing common. Even the use of green manure hedges cannot be regarded as introduced as a measure of erosion control, since the emphasis is mainly on the provision of organic matter and of temporary shade. Contour ridging or box ridging such as is practised in East Africa is quite unknown.

It is clear that much can be done in reducing the losses which undoubtedly occur in the early years of opening up coffee or when old areas are replanted. The great difficulty lies in convincing the planter of the damage that is taking place. The effects of erosion control may not be obvious nor the economic gains considerable. The results in the experiment quoted above are of interest in this respect. Where the erosion control measures depended on growing green manure hedges on contour bunds or on the provision of a cover crop, the check to soil losses was very great but the condition of the coffee in the dry season following the rains was noticeably better in the controls. This was traced to a lower percentage of soil moisture in the plots carrying the supplementary crops. To many planters, the immediate differences would bulk very much larger than prospective gains resulting from the soil retention, which could only be cashed in over a long period of years. Even where the control measures would not involve soil moisture competition, it is unlikely that any striking differences in growth and development would be visible for some considerable time and the cost factor would discourage a practice the value of which is not readily demonstrable. Herein lies the great problem of erosion control. In its spectacular manifestations, the damage done is obvious and calamitous. The spectacular manifestation is, however, the end product of a long series of invisible movements, the control of which means trouble and expenditure without any apparent return. The return comes in time in the maintenance of productivity and of the capital value of the land but unless the cultivation methods are very wasteful the differences may take a long time to show themselves.

The situation is especially difficult in coffee, where with growth of the shade cover and the development of a litter of fallen leaf, the early losses are checked and the damage done greatly slowed down. At the same time, the efficiency of the litter cover must be regarded as having been reduced by the damage done in the few years of exposure in the early stages of opening the land. At the same time, it must be pointed out that it is not easy to point to coffee areas in South India where a reasonable shade policy has been followed, which show serious signs of deterioration from soil erosion. Individual cases may occur on small areas where special circumstances play a part but speaking generally, I think it would be agreed by those familiar with South Indian coffee areas, that soil erosion plays a small part in determining the productivity of the land under this crop.

In conclusion, therefore, it may be said that the system followed on most coffee areas in South India affords a substantial degree of protection against soil erosion. There seems no great need for elaborate measures for its control and on the whole, it seems that attention to the improvement of control by the use of vegetation will meet most of the needs of coffee cultivation. This requires most emphasis in connection with the opening up of land for coffee or the replanting of old land. Most of all, planters require education on the question of soil erosion so that special cases can receive prompt attention and that cultivation methods, especially trenching and draining, shall be carried out with the dangers of badly designed work in mind. There is no question that much can be done in opening new clearings by the effective disposal of debris along contours, carrying out weeding and other works along contours and by raising green manure crops at a very small cost to check the losses during the years before the shade and its litter become effective.

—With acknowledgments to the 'Madras Agricultural Journal'.

YOUR GROCER: DOES HE STOCK ORANGE PEKOE?

BY

J. Louis Royal.

Put this question to a hundred persons you would come across in a busy thoroughfare of a South Indian provincial town and you would get the following answers:—

Fifty among them would like to be enlightened on what 'Pekoe' is.

Thirty of them would reply, 'Isn't it some kind of Tea? I usually drink my tea in that roadside restaurant and I don't bother about what kind it is.'

Another fifteen would answer something like, 'Oh! Isn't all that superior stuff exclusively exported to England?'

Of the remaining five two would probably point to a European store saying that it could be obtainable there.

But it is certain that ninety-five of the hundred persons would deny any knowledge of their grocers stocking finer kinds of tea.

The hundred persons interviewed form a constituent representation of that teeming middle class population, modernised by Western education and whose monthly household budget could well afford to include a couple of pounds of good quality tea. They constitute the hitherto neglected potential market in India for better grades of tea.

The marketing of any staple commodity normally divides itself into two functions: Dealer and consumer marketing. With a commodity like tea where the large planter cannot hope to contact his final consumer direct he has to depend on the usual distributing channels. His success depends to a large extent on his proper choice of the outlets.

The great intermediary in India between the wholesale house and the consumer is the retailer. He is also known as grocer, provision store keeper, etc. It is this individual who carries the manufacturer's output into every large part of the country. He keeps it in stock until it is wanted, advertises it by display and salesmanship, supplies it to the consumer in small quantities as required, collects the money for it and takes the responsibility for any bad debts incurred. At the present time the retailer is not selling his share of good quality tea and he hardly realises what an important asset it might become to his business if vigorously pushed. It would be worth analysing his attitude towards stocking superior grade Tea and whether his objections are legitimate.

The South Indian retailer exceeds the English village grocer in business conservatism. He lacks imagination and resource. He believes in the theory that the business methods of his grandfather hold good to him today. Yet he is prone to profit if it could be assured—does not matter what the goods are.

What are his objections for stocking finer kinds of Tea?

His first and usual objection is: 'No Demand.' The shop-keeper who raises this objection invariably has little imagination and less initiative. How can one expect demand for goods which are never in stock? With the exception of well advertised commodities people ask for things in a shop because they see them displayed in the window inside. There is really no justification for this objection. It is a mere excuse.

The second objection encountered from him is: 'Poor neighbourhood; Customers want cheap things.' The retailer who raises this objection is so obsessed by the appearance of the district that he has discouraged better class people from shopping locally, by putting nothing but the cheapest merchandise in his windows. If this man breaks from his conservative policy and carry better class goods; a better class trade is bound to result. In every district, however poor, there are people of good financial standing whose position makes them prospective customers for good quality tea. It is curious to observe that generally in these areas joint stock banks open branches.

The third and most frequent and yet one of the most illogical objections put forward is: 'Price too high.' It is necessary to view this from the consumer point of view as raised by him. If the objection is a genuine one and the prospective buyer cannot afford, it would simply mean that there is something radically wrong with our propaganda and advertising copy. We have not created sufficient desire in the prospect for our Orange Pekoe and Special Blends, for if we really had created desire for them, then the price would be a secondary factor altogether. People do not consider price, provided they have the money, if sufficient desire has been created. How many times in our own lives have we purchased things we could not really afford. If we all purchased only what we thought we could afford, half the things that are sold would stop in the factory. The one effective answer to this is to sell the difference between the price of the dust he sells at present and finer quality.

The analysis of the retailer's objections reveals that what he puts forward are not really objections but excuses. An excuse is put forward only when desire is absent or is lacking. It is then left to all those who desire the prosperity of the tea industry in India to help create this desire among the retailers and consumers. A single planter cannot do things at large. However earnest, his attempt will only be an isolated attempt. In the past in other fields we have achieved success by joint and co-operative action. We now realise that it would handsomely pay us to exploit this local potential market close to our factory doors. Will the Indian Tea Market Expansion Board then assist us by taking the due initiative by launching a dealer marketing campaign?

This campaign may be carried out in a three-fold programme:—

1. Trade publicity, campaigns and write ups.
2. Direct mail advertising to distributors.
3. Personal approach to distributors by the field staff of the I.T.M.E.B.

Later this might be supplemented by an extensive consumer advertising campaign.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

In the list of subscriptions promised or paid appearing on page 390 of the last issue the name 'G. C. Jack' should read as 'G. L. Jack'.

INDIAN COFFEE MARKET EXPANSION BOARD

Quarterly Report of the Director of Indian Coffee Market Expansion Board for the period January-March 1940.

D.I.C.P.'s Tours.—I travelled to Eastbourne early in January to meet the Managing Director of a chain of high-class cafes with headquarters at Hastings, who, with the aid of our display material, have been pushing the sales of a Pure Indian Coffee. Indian coffee is not, however, being used in the 'Cafe Blend', and on a previous visit they had shown themselves to be averse to making any alteration in this blend. The result of my interview on this occasion proved more successful. I was informed that they would be prepared to include Indian coffee in their Cafe Blend in future if it were obtainable at the right place for the desired qualities.

I called on other stores at Eastbourne and re-visited our friends in the trade at Lewes and Brighton. I returned to London with the feeling that Indian coffee was continuing to be kept fresh in the minds of the public in this part of the south of England.

During the last week of February I visited Newcastle and Middlesborough. These two towns and the surrounding district had been thoroughly covered during my tour in the month of July 1937, but, judging from correspondence, we were not satisfied that Indian coffee was receiving sufficient publicity in these areas. It appears, however, that this impression was not well founded. The bulk of the wholesale trade there is controlled by the resident representative of a wellknown London coffee wholesale house, who informed me that the interest aroused by my first visit had created a far more general use of Indian coffee. Indian coffee display material had been widely distributed, although this was not evident in his correspondence owing to the fact that many of his customers did not like their names disclosed on paper.

It was also encouraging to learn that a large retail firm with high-class cafes, who are said to control 75% of the retail trade in Newcastle, have included Indian coffee in their Cafe Blend since my last visit and are also selling a Pure Indian Coffee. My interview with the managing director of this firm, who showed a growing recognition of the merits of Indian coffee, was both pleasant and constructive.

Demonstrations in Shops.—During February demonstrations were held in two Eastbourne shops, at Messrs. Hudson Bros., Ltd., from February 5th to 10th, and at Messrs. Dicker & Company from February 12th to 17th. The Board has had little experience regarding the results which may be expected from demonstrations in shops. The demonstration week held in one of these shops showed a ten-fold increase in the sales of a Pure Indian Coffee, but it remains to be seen whether the increase of sales is maintained. Some of the customers who visited these two shops appeared to know that Indian coffee was served at canteens for Canadian Troops in London, and they were most interested to learn of the simple method by which Indian coffee can be made to perfection. It was noticed that during these two demonstration weeks several other shops and cafes in Eastbourne prominently displayed Indian coffee in their windows.

Canteens.—The Board were instrumental in introducing and demonstrating Indian coffee at the following canteens in London:—

British Columbia House Canteen, Regent-Street, London, S.W. 1.
The Maple Leaf Hostel Canteen, Brabizon House, Moreton-Street, Vauxhall Bridge-Road, S.W. 1.

The Beaver Club, Spring Gardens, Trafalgar Square, London, S.W. 1.
The Canadian Legion Services Hostel, Gower-Street, London, N.W. 1.

I should point out that no free cup has been given as an introductory measure during this quarter, for the continued success of Indian coffee at the National Gallery Mid-day Concerts makes this unnecessary.

The above-named canteens cater for Canadian Troops. The Beaver Club is by far the largest, and is housed in a large building adjoining the Admiralty and facing the Mall, which was previously a London Country Council building, and has the largest dance floor in England. The Club is under the patronage of Mrs. Vincent Massey, the wife of the High Commissioner for Canada. Two of the Board's demonstrators worked at the Beaver Club for five weeks, and the standard of making coffee in the Canadian way has been kept up.

The British Columbia House canteen was opened prior to the Beaver Club. It is on a less pretentious scale with a more homely atmosphere, and is well patronised. This canteen was set up by Mr. W. A. MacAdams, the Agent General for British Columbia in London, in co-operation with the Y.M.C.A. A Press article on this canteen appeared in *The Times* on the 2nd February, 1940, under the heading 'A Little Bit of Canada'. The article commences by saying 'Delicious cups of Indian coffee made in the Canadian way, apple pie with ice cream or with cheese, hot dogs and waffles are some of the reasons why Canadians in the Services are flocking to British Columbia House, Regent-Street'; and lower down the page the article continues with the words 'News of good coffee spreads like wild fire among Canadians—according to the canteen supervisor it is almost a ritual—but that is not the only reason for the popularity of this little bit of Canada'.

The cost of making one gallon of coffee (sufficient for 22 large mugs) served with sugar and a substitute cream works out at 2/9*d*., or under 1½*d*. a cup, based on the following prices obtaining on March 21st, 1940:—

Indian coffee @ ⅛*d*. a lb.,
Sugar @ 3½*d*. a lb.,
'Carnation' milk @ 6½*d*. a tin,
Fresh milk @ 3*d*. a pint.

Since we were supplied with these figures the sugar allowance has been reduced to 4 oz. These figures are very useful in enabling us to prove to other canteens that the expense in making Indian coffee is within a 1½*d*. a cup.

Each canteen is of the opinion that its coffee is the best coffee served in London. This is excellent publicity for Indian coffee, which is introduced by one canteen to another through the voluntary workers. We have, however, only mentioned the names of these canteens with which we have been in direct contact.

Display Material Production.—Ten thousand double crown posters (80″ x 22″) were produced during the quarter, of which one thousand were mounted on straw-board. This poster has a simple layout showing the head of an Indian and a bowl of coffee beans, with the wording 'A fine type—A fine coffee'—reproduction in full colour of the head and the bowl of coffee, a white background throwing them into relief. The result does credit to the art work of the designers, block makers and printers alike.

At the same time five hundred display cards were produced with the wording 'Indian Coffee Sold Here', shade printed in green and black to give the impression of the letters having been incised. This lettering is imposed on a veneered wood paper and mounted on straw-board, the whole giving the appearance of a solid piece of wood. The boards are intended to form a permanent display in shops selling a Pure Indian Coffee.

Press Advertising.—

The Daily Telegraph.—Advertisements in this daily appeared weekly for six months, terminating at the end of March.

The Times.—A special announcement calculated to appeal to women was inserted on the Women's Page of *The Times* on the 8th of March, 1940, conveying a message to canteens throughout the country to serve Indian coffee and drawing attention to the services of the Board in this connection. For this purpose a 9″ double column space was taken, and a thousand pull-offs of the advertisement have been distributed to the trade.

Poster Advertising.—Our new Indian Head Posters with Bowl of Coffee Beans was so appealing to the eye that it was decided to take space on the Bakerloo, Piccadilly and Central London Tube Stations for displaying this poster from 15th February to 15th May. Tube Stations were selected in preference to Underground Stations because the former are brilliantly lighted whilst the latter stations, being nearer the surface, have very subdued lighting during the hours of blackout. Consequently the posters on these stations are only effectively seen during the hours of day light.

General.—It will be noticed from this report that the Board are directing their activities more and more to general publicity.

A list of firms selling a Pure Indian Coffee is being compiled to enable information regarding their nearest stockists of Indian coffee to be supplied to enquirers. A prepaid Business Reply Postcard is being sent out to all our retail friends with the wording 'We are suppliers of a Pure Indian Coffee, and should like our name added to your list', which they are asked to fill in and return to us duly signed if they are selling a straight Indian coffee. It will be noticed that the wording of the postcards does not refer to Indian coffee being used in blends, but it should be mentioned that the Board's services to firms using a high proportion of Indian coffee in their blends is in no way curtailed.

New Contact.—We are in a position to report that another powerful group of provision stores using Indian coffee in their blends but not previously selling a straight Indian coffee, nor co-operating with the Board by making use of our display material, have recently approached us with a view to co-operating with us in both respects. They are now making a feature of Indian coffee display material, and we have been informed that 24 of their 500 odd branches are at present offering a Pure Indian Coffee for sale, whilst any branches will on request obtain supplies of Indian coffee from headquarters. This welcome co-operation indicates the accumulative effect of the Board's steady and persistent propaganda.

Continental Markets.—

Publicity in Norway.—The Board approved a programme of advertising Indian Monsooned Malabar Coffee in the Norwegian trade papers. It was decided to take a full-page in the wholesale paper *Norges Grossisttidende*, a monthly publication, to cover a period of six months, and six half-page advertisements every second week in the retail paper *Norges Kjobmannsblad.* This work was entrusted to the advertising firm of Dagfin Tollefsen Reklamebyra A/S of Oslo. Mr. Tollefsen visited London in December, 1939, and consulted with the D.I.C.P. and with the Board's advertising agents in London. He was supplied with pictorial matter and maps for inclusion in advertisements, and with photographs of the coffee industry to illustrate the D.I.C.P.'s article. This article has been published in both these papers which cover the whole of the coffee trade in Norway, and the following dates were fixed for the appearance of the advertisements:—

Norges Grossisttidende.—February, March, April, May, June and July 1940.

Norges Kjobmannsblad.—January 26th, February 2nd and 16th, March 1st, 15th and 29th 1940.

Cuttings of the advertisements and the article as they appeared have been received in this office. The layout of the advertisements and the photographs which illustrated the article were very well executed. A copy of the D.I.C.P.'s article is appended.

France.—There have been some discussions, both oral and in writing, between the Indian Trade Commissioner and the Anglo-French Co-ordinating Committee in London, and between the D.I.C.P. and the French Food Purchasing Committee in London, on the subject of Indian coffee for France. These negotiations should prove of the greatest assistance to the Indian coffee industry.

The distribution of display material in London is a feature of this quarter's appended list of window and counter shows.

GIFTS OF TEA BY PARCEL POST TO U.K.

The Secretary, U.P.A.S.I., has received the following letter No. 7755 dated 12th September 1940 from the Tea Controller for India:—

'I have the honour to state, for information and such action as may be considered necessary by your Association, that advice has been received from the Ministry of Food in the United Kingdom that bonafide unsolicited gifts of tea sent by parcel post are permitted to be imported into the United Kingdom without being covered by permits provided such parcels are addressed to individuals and marked "Gifts".

It is still, however, necessary to obtain an export licence for all such teas, and application for this should be made, on the appropriate form No. 7B, to the Joint Controller, Indian Tea Licensing Committee, Coonoor.

It is necessary to note that a separate application must be made for such parcel, the reason for this is that the licence is issued in triplicate, one portion of which has to be pasted on the parcel, the second portion is retained by the Consignor, and the third portion is returned to the Licensing Committee's offices after being endorsed with the Post Office cancellation stamp.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 16th September were:—

Rubber, including export licenses ...	56.00 cents a lb.
Rubber Export Quota	7.00 cents a lb.
1st quality rubber alone	49.00 cents a lb.

DISTRICT NOTES

THE ASSOCIATION OF PLANTERS OF TRAVANCORE

The First Annual General Meeting was held in Kottayam on the 30th August, 1940, at 11-30 a.m.

The following persons were present:—

Messrs. J. W. Tolson (*Chairman*), T. W. U. Park, E. H. Francis, L. J. T. Polgreen, P. Kurian John, T. M. Hassan Rowther, A. Thomas, W. G. Craig, W. A. J. Milner, W. D. Harrison.

Mr. Tolson delivered a speech, from which the following paragraphs are extracted:—

I am more than pleased to realise that an Association that was visualised eight years ago has now come into being in such strength that no one can doubt its representative character of both Indian and British opinion, but I trust that members will not rest until they are able to persuade a still larger acreage to join especially of rubber. When you realise that there are 78,700 acres of tea and 97,000 acres of rubber in Travancore, you will admit that there is still room for an enlargement of our membership.

The Association has had before it many difficulties caused by the War and loss of markets. The latest tragedy of France has brought home to all of us the seriousness of the position and now Britain and the Dominions together with India have the fate of Europe in their hands. The hour of trial has come and we must be ready to sacrifice our all in defence of a faith which is something of more importance to humanity, than the life or possessions of any one of us. The things we are struggling to preserve are the eternal values; without them men become beasts. Let us therefore face up to these deadly perils as a united Empire whose individuals are linked one to the other by self sacrifice. So shall we earn the victory which alone can free the world from the dark forces which threaten human civilisation.

During the year the rubber industry has had the satisfaction of having the Rubber Control Act passed through the legislatures and I would like on your behalf to thank Mr. Kurian John for all the hard work and time he spent on your account. The price of rubber has improved and although the costs of production are bound to increase there is a future of prosperity especially now that the Rubber Control Board has notified 85% production for the next quarter.

The tea industry has experienced many difficulties due to the outbreak of hostilities, first with the arrangement of the Short Term Contract and now with irregular shipping. The unprecedented drought for the second year in succession has seriously affected many areas and created many obstacles in trying to arrange for the full quota of teas to be despatched in respect of the season which ended on the 31st of March last. The arrangement, however, by which all teas despatched under special Export License were permitted, provided they had been delivered to the Custom Authorities by midnight on the 31st of May, relieved the situation. As you are aware, the price to be paid by the Food Controller is based, with minor exceptions, on the average of the three basic years 1936, 1937, 1938. In view of the fact that an extra penny has been agreed upon, in order to meet the increased cost of production, I consider that the Industry has reason to be satisfied that some measure of profit is assured, although with increasing costs especially that of rice, tea chests and the reduction of exports, it may be necessary to again review the position.

Owing to the collapse of the European Markets, coffee and cardamoms have been seriously affected. It will be necessary to search vigorously for new markets with the help of the Government. Cardamoms have suffered during the year from pests and it is to our interest to press the Government, or rather the University Research authorities to work in conjunction with the Imperial Council of Research to eradicate these diseases. The Imperial Council of Research have voted a sum of Rs. 4,000 for the purpose of making a Cardamom Disease Survey and this work is being carried out by Mr. Mayne, the Scientist to the United Planters' Association of Southern India.

The transport of the State is gradually being taken up by the Government and I think we should ask for the widening of certain roads and culverts in order to make for quicker and safer motoring.

The Association had a request from Government to fill in a questionnaire with regard to malarial control and estate sanitation. This questionnaire was circulated to all members and I would like to thank all those individuals and Companies who so promptly replied. The information collected is now in the hands of Government and I do not feel that we have anything to fear but rather that the Government has a great deal to learn from us which could be copied and applied to their rural uplift movement and also in their endeavour to control malaria in the Neyyattinkara area.

In my opinion, the Government should first demonstrate their efficiency in controlling malaria in Neyyattinkara before extending their efforts to the far more complicated problem of the High Ranges of Travancore.

During the past few years, a great deal of labour legislation has been added to the statute book and there is a demand in certain quarters for further legislation, such as minimum wages and standardisation of wages.

I trust that those responsible for framing further legislation will bear in mind the hardships which may be caused to the illiterate labourer by the introduction of a highly advanced European industrial legislation, suitable for towns with advanced amenities, to agricultural conditions as they exist in the State today.

There is a great difference between the two, industrial and agricultural labour, and they should be treated separately otherwise the agricultural labourer will suffer and will be discontented with conditions which were originally considered to be for his own welfare.

You now have four Labour Acts on the Statute Book, the Trade Union, the Trade Dispute, the Workmen's Compensation and the Factory Acts. The Payment of Wages Bill has been introduced into the Assembly and has been sent to a Select Committee; this Bill should be Law before the end of this year.

I would refer all members to the report of the Conciliation Board on the mats and matting industry. It is an interesting report and will no doubt have a great influence on future legislation in the State such as minimum wages, standardisation of wages and a maternity Bill.

The Board has asked the Government to enforce the Factory Act especially with regard to drinking water, latrines and the prevention of Sunday work. For this purpose the Government have set up a Commissioner of Labour with a Chief Inspector of Factories and a Staff of two Inspectors. I think that it will be necessary for us to insist that men with experience in Industrial Administration are appointed and that for the smooth running of the Department, constant transfers should not take place. We trust that the Inspectors will be trained in British India thus eliminating friction which might arise from inexperience and ignorance of working conditions in our factories.

I would draw the attention of all members to the proposed increase in taxation on incomes; on Excess Profits and the Special War Tax on profits. The Dewan intends to levy a tax on cardamoms.

Your Secretaries, Messrs. Harrisons & Crosfield, Ltd., are to be congratulated on having carried through the inauguration of our Association and I know that they must feel very satisfied at having after many years of hard work launched an Association which has immense possibilities for furthering planting interests.'

After the Report of Executive Committee and the Statement of Accounts have been adopted, the following special business was discussed:—

Legislation.—In view of the Second Amendment Bill (now in the Select Committee stage) to the Travancore Companies Act, Mr. Polgreen expressed the hope that the Planting Members would emphasise to the Select Committee the great inconvenience caused by the provisions of those Sections of the Act which require Balance Sheets and Directors' Reports to be signed and sworn to by all Directors and that they should press for the changes requested by the Travancore Chamber of Commerce in their representations to Government. An interesting discussion ensued and it was finally decided that a deputation from this Association to Government would be the best step to take. The deputation was to consist of the two Planting Members, Mr. L. J. T. Polgreen and Mr. P. Kurian John and it was agreed that these gentlemen should meet the Dewan with the least possible delay.

Regulation of Production and Marketing of Tea in India.—A brief discussion on this subject took place during which a reference was made to the recommendation from North India that marketing rights for the current Restriction Year should be reduced from 15% of basic figures to 13%. Mr. E. H. Francis explained that the question had been carefully considered at the recent Annual General Meeting of the U.P.A.S.I. when it had been decided unanimously to oppose the recommendation as far as Season 1940-41 was concerned. However, in view of declining prices Mr. E. H. Francis pointed out that a reduction from the 1st of April next might be advisable and suggested that producers should give the matter their consideration.

Adulteration of Tea.—In the absence of Mr. W. H. Miles, Commissioner for the Indian Tea Market Expansion Board whose inability to attend the meeting was noted with regret, Mr. W. A. J. Milner spoke at length on the subject.

After a general discussion the Chairman thanked Mr. Milner for his informative address and said that the Executive Committee would give the matter their special attention and that, as soon as sufficient data had been collected, Government would be approached with a request that they should see that the provisions of the Adulterated Foods Act should be enforced in all municipalities.

Travancore Export Duty—Tea.—Reference was made to correspondence addressed to the Excise Commissioner, Trivandrum, by Mr. P. Kurian John and the Association's letter to the same official in support of Mr. Kurian John's request that the Customs Authorities should refrain from levying export duty on excess weights of a fraction of a pound. Mr. Kurian John then informed the meeting that he had nothing further to say as the Customs Authorities had discontinued levying duty on such excess weights.

Labour.—Mr. W. A. J. Milner suggested that a Sub-Committee be formed for the purpose of bringing up to date the Inter-District Labour Rules, but Mr. E. H. Francis pointed out that the Association had no Labour Rules and also indicated that, in his opinion, it would be preferable if the matter was left to the four District Associations. The meeting was in agreement with this and the Chairman advised Mr. Milner that the Association would address the District Associations accordingly.

Subscription for 1940-41.—After the submission of a Draft Budget by the Secretaries it was agreed to by the meeting that the cess for the current year should be 9 pies per acre for ordinary members which would permit of building up an adequate cash reserve.

Other Business.—(*a*) *U.P.A.S.I.*—Mr. Polgreen recommended that the Association should join the U.P.A.S.I. as an Association Member, the subscription being Rs. 50 per annum. This was unanimously approved by the meeting whereupon the Chairman indicated that the matter would receive the prompt attention of the Executive Committee.

(*b*) *Tax on Cardamoms.*—Mr. P. Kurian John drew the attention of members to the fact that a few years ago cardamom owners had agreed to an increase in land tax of Re. 1 per acre on the clear understanding from Government that no export duty would be levied. In his opinion, therefore, an export tax on cardamoms now (referred to in the Chairman's speech) could not be justified and should be opposed in the event of the matter being pursued by Government. The meeting agreed and the planting members promised to watch the matter carefully.

The following were elected to the Executive Committee for the forthcoming year:—

Messrs. P. Kurian John, E. H. Francis, W. F. Inman, A. V. Thomas and L. J. T. Polgreen.

Ex-Officio Members.—Mr. J. W. Tolson (Planting Member, Sri Mulam Assembly); Mr. T. W. U. Park (Planting Member, Sri Chitra State Council).

Mr. J. W. Tolson was elected Chairman of the Association.

Appointment of Secretaries for 1940-41.—Mr. P. Kurian John proposed that Messrs. Harrisons & Crosfield, Ltd., should be re-elected Secretaries of the Association on the same remuneration. This was seconded by Mr. W. G. Craig and carried. Mr. Polgreen said that while his Firm would be glad to do everything possible to further the interests and progress of the Association he could not guarantee, under conditions of reduced staff and extra work, and with such an uncertain future, that they would be able to continue the duties of Secretaries but that they would do so for as long as possible. He suggested that the Executive Committee should consider alternative secretarial arrangements in case these proved necessary.

Mr. J. W. Tolson replied that members recognised with gratitude what Messrs. Harrisons & Crosfield, Ltd., had already done in connection with the formation and initial stages of the Association and that he hoped they would find it possible to continue as Secretaries.

MYSORE

An Extraordinary General Meeting of the Mysore Planters' Association (Incorporated) was held on 30th August 1940.

The Chairman asked all present to stand and said that on receiving the news of the death of H.H. the late Maharaja he had written to his Private Secretary as follows:—

'On behalf of all members of this Association may I ask you to convey to H.H. the Yuvaraja and the Royal Family our deepest sympathy and heartfelt regrets at the untimely death of H.H. the Maharaja; all the more so as, knowing his interest in all communities, I trust I may say, without presumption, that we feel we have lost a personal friend.'

and had received the following reply:—

'I am desired by His Highness the Maharaja to acknowledge with thanks the receipt of your letter of the 7th instant conveying on behalf of the members of the Mysore Planters' Association their deep sympathy to His Highness and the members of His Highness's family at the untimely death of His Highness the late Maharaja.'

The Chairman said that by the death of His Highness Maharaja Sri Krishnaraja Wadiyar Bahadur the State had lost a really great Ruler and a really good man. He was, too, a man of most generous disposition and great personal charm and inspired confidence and affection in everyone who was privileged to meet him, and he was not above talking to the least of his subjects in leisure moments. He had always been interested in the planting districts and had given to planters the land for the building in which the Association was holding its meeting. Every member of the Association sincerely felt and deeply regretted the sad death of His late Highness under whom they had all lived happily for so long.

Mr. Hamilton died in Mangalore on 30th July at the age of 76. He came out to India in 1884 to Messrs. Alston Lowe & Co. at Tellicherry and from there went to Mangalore to the same coffee curing works to which he returned later after they had been acquired by Messrs. Volkart Brothers. About 1890 he came to Mysore and acquired Seagully, Herisigera and Chandrapore Estates and he remained until 1914 when he returned to Mangalore and joined Messrs. Volkart Brothers. He retired in 1923.

Whilst an active planter he took a great interest in the hybridisation of coffee and in all Association work. He was a member of the South Mysore Planters' Association from 1890 to 1900 and again from 1907 to 1914: he was its Honorary Secretary from 1890 to 1893: a member of its Committee from 1907 to 1912: its President from 1894 to 1899: its delegate to the U.P.A.S.I. in 1896 and 1918: and he was a member of the Mysore Representative Assembly in 1896 and 1897.

The formation of the U.P.A.S.I. was very largely due to Mr. Hamilton and he did most of the necessary spade work. He was Vice-President of the U.P.A.S.I. in 1896-97 and 1907-08 and President in 1908-09 and 1910-11. He represented planting interests in the Madras Legislative Council from 1909 to 1912.

Mr. Hamilton thus did a very great amount of work for planting interests both in Mysore and South India and his death is a sad and much regretted loss to us all.

Coffee Marketing in War Time.—The Chairman invited Mr. Kirwan to address the meeting. Mr. Kirwan made a long, most lucid and convincing speech on the probable market conditions for the coming crop and the steps that should be taken to meet them. His speech was applauded and the meeting unanimously supported Mr. Kirwan's recommendations. Those were, roughly, that the suggested Compulsory Control Scheme was, owing to the lack of time, impracticable for the coming crop, and that the alternative scheme of which members had been informed should be supported. Those present were asked to state the amounts of crop with which they would support the alternative scheme and the total obtained was encouraging.

The meeting further agreed that Mr. Bull's scheme should be used as a basis for working out arrangements for the 1941-42 and subsequent crops, and passed by 20 votes to 2 (the majority including visitors) the following resolution proposed by Mr. Hill and seconded by Mr. Morgan:—

'That this Association is in favour of asking the Mysore Government to fix a reasonable minimum price for the 1940-41 coffee crop.'

It was also of the opinion that the possibility that no exports would be possible must be faced.

The Chairman expressed the thanks of all present to Messrs. Kirwan, Bull, James and Langley for all the work they had done and were doing in this matter.

A. MIDDLETON,
Chairman.

A. L. HILL,
Secretary.

TEA QUOTA PRICES

The Quota prices ruling in South India on 25th September were:—

Tea Export Rights ...	... 8 annas 6 pies per lb.
Internal Market Rights ...	... 1 pie per lb.

MARKET REPORT AND PRICES

Calcutta (*Issued by the Calcutta Tea Brokers' Association*).

Sales Nos. 13 and 14 were held on 9th, 10th, 16th and 17th September.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 13	Sale No. 14	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	12 2	12 7	12 1	10 6	9 5
For Internal Consumption:—					
Leaf Teas ...	3 8	3 9	3 10	4 0	4 3
Dusts ...	4 8	4 9	4 9	4 1	4 4
Green Teas ...	6 4	6 3	6 7	5 1	6 7

RUBBER—London Rubber on September 23, 1940, 12*d*.

Colombo (*Issued by the Colombo Brokers' Association*).

Average prices obtained (in cents.)

SOUTH INDIAN TEA SALES	Sep. 17, 1940
Kadalaar ...	... 74

RUBBER SALES	Sep. 12, 1940
Ribbed Smoked Sheet ...	55½
Contract Crepe ...	52
Mottled Brown Latex Crepe	49 to 51
Brown Scrap Crepe ...	45¼

Madras (*As on 26th September* 1940. *Issued by Messrs. Paterson & Co.*).

Since our last report a fortnight ago markets have remained very steady. Government Securities have ruled particularly firm and a further rise has taken place in most of the issues. For some little time it has been anticipated that Provincial Governments would be going to the market for fresh loans. Official announcements were made to this end on Monday. The loans take the form of a fresh issue of 3% 1952 and are as follows:—

Madras—Rs. 70 lacs at Rs. 95 per cent 2nd issue.
Punjab—Rs. 175 lacs at Rs. 94-8 as. per cent 2nd issue.
United Provinces—Rs. 100 lacs at Rs. 94-8 as. 2nd issue.
Assam—50 lacs at Rs. 94 per cent.

The lists open and close on Friday 27th instant. Following this Government announcement the existing Madras Provincial Loans were marked down from Rs. 97 to Rs. 95. At this price there were good buyers over at the close.

RUBBER

The price for Spot rubber shows little to no alteration, the closing price being 11¾*d*. The Indian price has been 49 cents for Uncouponed Rubber and 7 cents for the Quota. A wider inquiry has been in evidence for local rubber shares particularly in the case of those companies under the control of A. V. Thomas. Coorgs were firmer at Rs. 26-12 as., a rise of Re. 1-4 as. on the fortnight's trading. Kalpettas were wanted at Rs. 16-4 as. and Velliamattams at Rs. 16-4 as. Midlands on the other hand were a quiet feature at Rs. 4-3 as. Among shares of the older established companies Cochin Malabars changed hands fairly freely at Rs. 6-1 an., while Thirumbadis attracted good investment support at Re. 1-7 as. ex dividend. There was also a keen demand for Malankara Rubbers at lower limits. Vaikundams were wanted locally at a little under Rs. 7 ex the interim dividend of 2½% while there was a fair inquiry for Cochin Rubbers at Rs. 13-8 as.

TEA

The investment support for leading counters continued unabated. Periakaramalais in particular have been a popular feature and have risen from around Rs. 16-4 as. to Rs. 17, at the close. Highland Produce were also in keen demand at up to Rs. 25, and Peermades at up to Rs. 24. United Nilgiris changed hands at Rs. 111-8 as. and had buyers over at the close above this rate. Chembra Peaks were firmer at Rs. 3-1 an. ex dividend. A certain amount of business was recorded in Balanoor Ordinaries at up to Rs. 7-10 as. and the Prefs. at Rs. 9-12 as.

DIVIDEND ANNOUNCEMENTS

Haileyburia Teas—5% first interim for the year 1940, and paid.
Periakaramalais—5% first interim for 31st March 1941. Payable 2-10-40.
Nonsuch Teas—13% final making 17% for the year 30th June 1940. Payable 13-11-40.

FORTNIGHTLY RAINFALL STATEMENT

September 1, 1940 *to September* 14, 1940—*(Inclusive).*

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	...	...	92·49	92·49	25. Kotagiri ...	0·76	1·10	30·26	32·12
3. Kallar B'dge	2·49	1·58	109·67	113·74	26. Ootacamund...	0·31	0·84	31·11	32·26
4. Koney ...	0·02	0·09	92·59	92·70	27. Yercaud ...	0·85	2·33	37·23	40·41
8. Twyford ...	1·00	2·20	209·11	212·31	30. Devarshola T.E.S. ...	N.R.	N.R.	59·85	...
9. Pettimudi ...	1·86	1·65	281·30	284·81	31. CALICUT ...	0·24	...	105·62	105·86
10. Kalaar ...	2·65	1·25	220·32	224·22	32. Kuttiyadi ...	0·47	0·18	113·06	113·71
11. Chittavurrai...	0·42	2·42	36·24	39·08	33. Vayitri ...	1·97	0·12	145·43	147·52
12. BODI'KANUR...	...	1·45	10·06	11·51	34. Manantoddi...	0·75	0·11	101·50	102·36
13. COCHIN ...	0·35	0·17	99·94	100·46	35. Bilgiris ...	6·76	1·69	44·12	52·57
14. Mooply ...	0·14	0·19	112·93	113·26	38. Pollibetta ...	0·17	1·87	56·74	58·78
15. Pachaimallai	1·07	2·37	114·42	117·86	39. Coovercolly ...	0·10	0·14	69·46	69·70
16. Mudis ...	5·75	0·74	166·62	173·11	41. Kadamane ...	3·16	1·93	229·32	234·41
17. POLLACHI ...	...	0·08	25·09	25·17	43. Merthisub'gey	1·20	...	113·64	114·84
18. Ropeway Waterfall ...	0·85	0·55	64·20	65·60	45. Balehonnur ...	0·88	0·03	106·31	107·22
21. Kerala Estate	0·89	0·25	139·65	140·79	46. MANGALORE ...	0·19	0·37	125·83	126·39
22. Naduvattam	2·59	1·21	91·50	95·30	47. MADRAS ...	0·09	...	13·29	13·38
24. Coonoor ...	...	...	...	...					

N.R. = No Return Received.

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All Communications to be addressed to the Editor, ' Glenview ', Coonoor, Nilgiris

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EDITORIAL

On another page in this issue will be found a second list of donations to the Southern India Planters' Benevolent Fund promised as the result of the special appeal to raise Rs. 15,000, in addition to the ordinary annual subscriptions, by the 31st March 1941 in order to be able to secure for the Fund the generous offer made by an anonymous donor as mentioned in these pages last month. Our readers will see that the special donations have very nearly reached the half-way mark, although only about a quarter of the individual planters and a very small proportion of Estates and Planting Companies have, up to date, responded to the appeal. We take this opportunity of again urging every individual planter to contribute towards this appeal to the best of his ability however small his contribution may be, and we would welcome a far greater number of donations from Estates, Planting Companies and Firm Members of the Association.

It has been suggested to the Committee of the Fund that those members who have gone on active service may wish to suspend their annual subscriptions. It is realised that in many cases it will unfortunately be necessary for such members to cut down their expenses to the minimum, and that subscriptions to the Fund may have to be suspended. The Committee however wish to appeal to members on active service to continue their subscriptions if it is at all possible, as the individual sacrifice of Rs. 10 per annum is a comparatively small one and the calls on the Fund in the coming years may be expected to be heavy.

In the case of those members who do find it necessary to suspend their subscriptions, it has been suggested that they should still be regarded as members of the Fund. The Committee have no power to do this, since a subscriber whose subscription is one year in arrears automatically ceases to be a member. The Committee do have power however under Rule 8(c) to condone arrears and readmit a former subscriber to membership, under such terms as regards payment of arrears as they may think fit, and it has been unanimously agreed that in the case of those members on active service who suspend their subscriptions while on service the arrears will be automatically condoned and such members readmitted on application.

* * * * * *

When it was announced over two months ago that the consumption of tea was to be rationed in the United Kingdom at the low figure of 2 oz. per individual per week a great deal of consternation was expressed at this very low figure, which only represents barely two-thirds of the normal consumption of tea in recent years. There is one point that seems to have escaped the attention of those who have been complaining about this ration in the Home Papers. Shortly after the rationing announcement was made, another announcement was given over the wireless that the Minister for Food did hope that he would be able to increase the ration to 3 oz. during the winter months. Naturally he could not give a definite promise, as it entirely depends upon sufficient shipping space being available. We can but hope that there will be an improvement in shipping facilities for the transport of tea, which is such a vital item in the food schedule both for Troops and civilians.

* * * * * *

At a meeting of the Committee of Control of the India Branch of the Ross Institute of Tropical Hygiene, held in Calcutta on 28th August 1940, the first Report of the Committee was presented and adopted. The Report deals with the work carried out in India during the year ending 31st July 1940, but, as it is the first Annual Report of the Committee, it describes the circumstances in which the Committee was set up and goes on to survey briefly the organisation, researches and other main activities of the India Branch. Copies of this report have been circulated to all estates which are subscribers to the Institute. Should, however, any of our readers care to have a copy of the Report, whether they are subscribers or not, the Secretary, U.P.A.S.I., will be pleased to forward a copy to anyone who would care to apply for it.

TEA FOR THE KING

According to the *Sapper Regimental Journal*, His Majesty the King during his visit to the Western front—to be precise when His Majesty was at 1st Corps G.H.Q., B.E.F.—created quite a furore by asking for a cup of tea. Nobody had anticipated that the King would ask for a cup of tea; but things moved quickly; a Primus stove was lit and a frenzied hunt produced one brown teapot—minus lid—one tea strainer, one cup, some tea, a half used tin of condensed milk and three pieces of lump sugar. In the absence of a spoon, the *Journal* relates, a ruler was used to stir the tea and the tea was taken to His Majesty, who remarked: 'It looks rather strong.' 'A regular soldier's cup of tea, isn't it, sir?' remarked the Corps Commander. After His Majesty's departure the cup was drawn for and won by a sergeant, in whose home it now reposes complete with stains.

J. C. SWAYNE

Died at Nettimaad, Munnar, on 26th September 1940.

The late Mr. Swayne was the Manager of Yellapatti Estate, Munnar, for several years.

PRODUCTION OF FERTILIZERS IN INDIA

BY

N. N. Sen Gupta, M.Sc., A.I.C.,
Superintendent, Government Test House, Alipore.

The principle underlying the use of fertilizers, namely, the necessity of adding plant food to the soil, was understood in a general way even in the early days of civilization. It was only about a century ago, however, that the science of plant nutrition and the requirements of the soil for certain elements, in which it is liable to be deficient, began to be clear as a result of the researches of de Saussure and Liebig on the Continent and Lawes and Gilbert in England. The versatile Lawes was not only one of the most brilliant pathfinders in agricultural science but was also the first manufacturer of a chemical fertilizer, namely superphosphate. Phenomenal progress has since been made in the manufacture of chemical fertilizers in Europe, America and Japan, and today the combined world production in the case of some of the important fertilizers is computed in terms of millions of tons. The fertilizer industry by its effect on the cost of production of sulphuric acid has given a tremendous impetus to the development of the heavy chemical industries. Since the World War of 1914-18 the synthetic manufacture of fertilizers has been greatly developed.

The intelligent use of fertilizers has become an integral part of the agriculture of the advanced countries in Europe, in America and in other parts of the world. This cannot be claimed of India; indeed, until comparatively recently the use of fertilizers by the ryot was insignificant in spite of the field experiments carried out at the different agricultural research stations in this country. The poverty of the ryot was the main impediment, In recent years, however, as a result of a combination of circumstances, including the lowered prices of fertilizers and the systematic propaganda conducted by commercial firms, the use of fertilizers by the cultivator has become considerably in excess of that on tea and coffee estates which were at one time practically the sole consumers of these commodities in India. Even now the consumption by the cultivator represents a small fraction of that which will be possible if the circumstances alter sufficiently so as to make the use of fertilizers general.

IMPORTS AND EXPORTS

In this article it is proposed to deal briefly with the production of fertilizers in India, but before proceeding to discuss production it will be well to understand the extent to which fertilizers are at present being imported into and exported out of this country. The exports consist almost exclusively of organic fertilizers manufactured from bones and animal and fish refuse which are slow-acting and also unpopular in India due to religious prejudice. The imports and exports for 1938-39 are shown below:—

Imports	Tons	Value in rupees
Nitrate of soda	2,137	2,23,891
Sulphate of ammonia ...	76,748	82,99,126
Muriate of potash	1,829	1,82,606
Superphosphate	6,788	5,65,240
Ammonium phosphate	2,569	3,95,166
Fish manure ...	2,349	72,538
Other fertilizers	7,032	7,78,757
Total ...	99,452	105,17,324

Exports	Tons	Value in rupees
Bones for manurial purposes ...	15,424	11,84,478
Bone meal	25,072	14,85,764
Fish manure	4,710	3,79,374
Guano	178	19,045
Horn meal	1,007	1,04,888
Sulphate of ammonia	1,313	1,36,855
Other fertilizers	5,546	4,11,341
Total ...	53,250	37,21,685

To roughly 1,00,000 tons of fertilizers which are at present annually imported it is necessary to add approximately 20,000 tons of sulphate of ammonia and 2,000 tons of superphosphate produced in the country and also the amounts of the various indigenous organic manures consumed before the total approximate consumption of fertilizers in India can be arrived at. When it is considered, however, that the world's present annual production of sulphate of ammonia and superphosphate alone is of the order of 40,00,000 and 150,00,000 tons respectively, the comparative smallness of India's total consumption would be obvious.

NITRATE OF POTASH

The manufacture of nitrate of potash is a very old industry of Northern India. Although potentially a fertilizer of unusual value owing to the presence of both nitrogen and potash in it, the material is not used to a large extent as a fertilizer. This is due partly to its high cost of production, as compared with that of other nitrogenous fertilizers, and partly to the fact that it is in demand as a constituent of explosives. As is generally known it is found in a crude form as an efflorescence in the surface soil where it is formed as a result of the decomposition of nitrogenous organic matter and the bacterial nitrification of the resultant ammonia. In order that nitrate of potash may be formed, potash salts must also be simultaneously available in the soil.

SALTPETRE

The crude saltpetre from which nitrate of potash is obtained varies in composition and usually contains a large proportion of sodium chloride. The refining consists in removing impurities including sodium chloride. Crude saltpetre and also the earths from which saltpetre is extracted are used locally as a fertilizer, but the bulk of the material is refined into nitrate of potash for purposes of export. The use of the refined material also as a fertilizer is not unknown.

The production of saltpetre is at present on a much smaller scale than it was at the beginning of the nineteenth century when the export amounted to 80,000 tons per annum. The average annual export during recent years has not exceeded 8,000 tons, but presumably the present European war will again stimulate its production and export. A large number of refineries exist in the Punjab, the United Provinces and Bihar for the production of saltpetre.

From the figures given above it will be seen that some 2,000 tons of nitrate of soda is still being imported annually into this country. In the past it has been imported in much larger quantities, but apparently it has in recent years not been able to compete successfully with sulphate of ammonia. The world's entire requirement of nitrate of soda is met from Chile where it is found as a natural deposit, and there is no possibility of its manufacture being undertaken in this country.

SULPHATE OF AMMONIA

The most important fertilizer from the point of view of Indian manufacture is undoubtedly sulphate of ammonia. Some 90,000 tons of this fertilizer are now being consumed annually in this country, and it may confidently be expected that its consumption will continue to increase. Ten years ago the total consumption in India was between 20,000 and 25,000 tons, and the increase by 300 per cent within a decade indicates the rate at which its use is spreading among the cultivators. Of recent years, and of course, before the present war started its price had been considerably lowered and the firms concerned in its sale maintained an organisation for propaganda and ready availability of the material. It is not too much to expect that its price will, after the present war is over, be lowered further in order that the use of this fertilizer may be more widespread.

Until the advent of the Haber-Bosch process of synthetic manufacture of ammonia about two decades ago sulphate of ammonia was produced entirely as a by-product in the manufacture of coal-gas and metallurgical coke. At present the synthetic production probably exceeds the total quantity made as a by-product. The nitrogen present in the coal is given off as ammonia as a result of destructive distillation resorted to in the production of both gas and coke. The gas containing ammonia is first stripped of its tar content and is then conducted through a plant, known as the saturator, which contains sulphuric acid. Sulphate of ammonia is produced as a result of interaction between ammonia gas and sulphuric acid, and this collects as a paste at the bottom of the saturator. The paste is removed, dried and neutralized with sodium carbonate. In India the production of sulphate of ammonia dates back to 1909, and the fertilizer has so far been made practically entirely by coke plants operating in the coal-fields and also by those attached to the iron and steel factories of Bengal and Bihar. It is probably not yet generally known that the Mysore Chemicals & Fertilizers, Ltd., are about to place on the market sulphate of ammonia made synthetically at their factory situated in Mysore. This marks an important new development in the production of fertilizers in this country.

The East Indian Railway's coke plant attached to the Railway's collieries in the Giridih coalfield was the first to produce sulphate of ammonia in India. The coke plant was erected in 1909, and for the first six years the acid required for the recovery of ammonia was purchased from Calcutta. In 1915 an acid plant was added which has since supplied the requirements of the sulphate of ammonia plant. The Bengal Iron Company were the next in the field and erected their by-products recovery plant at Kulti in 1915. The Tata Iron & Steel Company at Jamshedpur followed in 1916, and subsequently several other concerns, such as the Loyabad Coking and By-Products Recovery Plant in the Jharia coal-field, the Indian Iron & Steel Company near Asansol and the Bararee Coke Company, near Dhanbad, began to produce sulphate of ammonia. It is understood that the newly-founded Steel Corporation of Bengal do not contemplate manufacturing sulphate of ammonia. With the exception of the East Indian Railway Coke Plant and the Bararee Coke Company, all the Indian producers of sulphate of ammonia as a by-product are members of the British Sulphate of Ammonia Federation, and the price of the commodity as sold in India is, therefore, controlled by the Federation. The largest Indian producer is the Tata Iron & Steel Company, and the total production has so far not exceeded 20,000 tons per annum.

Reference has already been made to the Mysore Chemicals & Fertilizers, Ltd. This firm proposes to manufacture about 7,000 tons of sulphate of ammonia annually, and the production has probably already been commenced. It is anticipated that practically the entire output of this factory will be consumed in the Mysore State by the sugarcane cultivation and the coffee and tea estates. The factory manufactures sulphuric acid by the contact process and are the first to produce ammonia synthetically in this country. The synthetic process adopted is known as the 'Chemico' process which is presumably an adaptation of the original Haber-Bosch process worked out in Germany and later adopted by the Imperial Chemical Industries at their works at Billingham. In principle the synthetic production of ammonia consists in combining three volumes of hydrogen with one volume of nitrogen in the presence of a catalyst; in practice, however, the process is a complicated one. Further developments in the manufacture of sulphate of ammonia will presumably be along the lines of synthetic production, but the output from coke plants should also increase as the iron and steel industry expands further.

PHOSPHATE OF AMMONIA

Considerable quantities of calcium cyanamide have in the past been imported into India, but owing to the increasing popularity of sulphate of ammonia its consumption has been on the decline. No cyanamide is produced in this country and none is likely to be produced, although in a note published in 1917 Dr. (later Sir) L. L. Fermor, formerly of the Geological Survey of India, suggested three possible sites for the establishment of this industry in India. A comparatively recent addition to the range of inorganic fertilizers is phosphate of ammonia which is now being imported into this country in substantial quantities. It is produced synthetically and is a double fertilizer in that it supplies both nitrogen and phosphorus to the soil. No attempt has yet been made to produce it in this country, although in view of the recent development in Mysore there does not seem to be any reason why it cannot be made in India.

SUPERPHOSPHATE

The import of superphosphate has for some years been of the order of 7,000 tons per annum, and some 2,000 tons are manufactured in this country. This fertilizer is produced on a vast scale in different parts of the world, and some years ago when the Tariff Board investigated the position of the heavy chemical industries in this country, it was thought that with suitable protection from the State the manufacture of superphosphate could be developed. The difficulties attending the manufacture of this fertilizer are (1) lack of suitable rock phosphates and (2) the comparatively high cost of production of sulphuric acid in the country. Deposits of phosphates are available in the Trichinopoly district of Madras and in the Singhbhum district of Chota Nagpur, but their high iron content renders them unsuitable for the manufacture of superphosphate. Superphosphate can also be made from bones, and although the latter are plentiful in the country, they can usually be exported to fetch higher prices than are paid for imported rock phosphate. These are some of the factors which have inhibited the development of the superphosphate industry in the country. But the time may yet come when as a result of the double movement of expansion of the heavy chemical industries and increased purchasing power of the ryot a successful superphosphate industry will be established in India.

Only two firms in India have so far seriously attempted to produce superphosphate in this country from crushed bones. One of these, Messrs. Dharamsi Morarji Chemical Company of Bombay, had a comparatively ambitious scheme for production of this fertilizer, but the expectations were not realised. They continued to produce on a small scale for some years and have since abandoned this manufacture. Messrs. Parry & Company of Madras are still producing superphosphate at the rate of 2,000 tons per annum, most of which is made from bones.

Basic slag obtained as a by-product of the steel industry is an important phosphatic fertilizer in England and under certain soil conditions has been known to produce remarkable results. The Indian slag is poor in phosphorus and its grinding to the requisite degree of fineness is consequently not considered to be an economic proposition.

POTASSIC FERTILIZERS

Potassic fertilizers, mainly in the form of muriate of potash, are in ordinary times imported largely from Germany and Palestine. India does not produce any potassic fertilizer except in the form of nitrate of potash which has already been discussed. Potash salts are present among the beds of rock salt in the Salt Range of the Punjab, and the question of their exploitation for manurial purposes was considered by the members of the Government Salt Department and the Geological Survey of India, but the prospects were thought to be highly doubtful.

ORGANIC FERTILIZERS

India produces considerable quantities of organic fertilizers at or near Calcutta, Madras, Cawnpore and Karachi. The exact figures for production are not available, but the export figures given earlier in this article indicate the scale of production. Unsteamed bone-meal is produced in those bone mills which crush bones for gelatine. The portion of bones which gets powdered in the process of crushing is marketed as unsteamed bone-meal. Steamed bone-meal is obtained by steaming bone pieces (usually greasy bones) in digesters under a pressure of 60/75 lb. for 2-3 hours. After drying, the steamed material is crushed to a fine powder. Steamed horn and hoof meal and steamed leather meal (charmon) are produced by the same process as steamed bone-meal. Sterilized animal meal is derived from animal carcasses, etc. After skinning the dead animals are introduced into superheated rotaries and converted into dried pulp which is crushed in disintegrators. Owing to its disagreeable smell, export is difficult and the material is largely used in mixed fertilizers for tea gardens. Fish guano is obtained from the refuse of small fishes which are caught in large numbers in the Sunderbans and on the Malabar coast. This material is also difficult to export and is consumed largely in the country admixed with other fertilizers. All the organic fertilizers mentioned above are produced in substantial quantities in India. Another type of organic fertilizer which is produced in the country and used to a considerable extent by the cultivator is oil-seed cake meals. These are by-products of the oil pressing industry, and those varieties, which are not fit for use as a cattle food, find their way largely into the soil.

—Indian Farming.

NEW TENDENCIES IN THE RUBBER INDUSTRY

Within the last twenty years, the rubber industry has undergone tremendous developments, the best proof of which is furnished by the increase in the consumption of the raw material. From a figure of 348,000 tons in 1919, rubber consumption has risen until, in 1938, it exceeded 1,000,000 tons. The rate of increase has been fairly even, but during the twenty-year period one main fact emerges, namely, that the development of the industry has been closely allied to the expansion of the motor trade. In fact, the rubber industry is indebted for its progress almost entirely to the growth of motorisation throughout the world.

During the period in question, technical growth has proceeded parallel with economic growth. The development of accelerators, a greater understanding of the chemical processes of vulcunisation, the use of carbon black, the increasing employment of latex in a diverse range of products—these are the main milestones. With the extension of research, rubber has invaded many new fields, although their scope has naturally not even approached that of the tyre field.

Æronautics have created a demand, both in heavier and lighter-than-air machines. Rubber and latex sponge have displaced natural products of many kinds. Flooring of rubber has superseded coverings of other material. Rubber toys have invaded, and given quite new direction to, the toy industry. Rubber boats have formed an important item in the war equipment of many countries.

The rapidity of expansion of the first decade or so after the last war was bound to slow up sooner or later, and be followed by a period of no movement at all. The student of the world's rubber industry who has not allowed his judgment to be coloured by isolated incidents, will probably have reached the conclusion that the stationary period has now been in existence for some time. Appreciating the significance of cause and effect, however, he would realise that the present situation was bound to have influence on future tendencies, both in the economic and technical fields.

The curve of raw rubber consumption no longer shows the steep rises of the period 1920-30. Recessions have occurred more frequently, and, latterly, it has tended to become a straight line. For this, the motor industry is mainly responsible. In many, and probably in most, of the important countries, that industry appears to be approaching saturation point—a condition where the income of the majority of the population permits ownership of a car. When this point is reached, used cars are exchanged for new ones, the second-hand machines are put on the market and are bought by persons who cannot afford new models.

Obviously, this saturation point is relative. In periods of prosperity, income tends to rise, new capital is created and a new group of persons enter the market as buyers. The same result follows reduction in the prices of cars, either by new methods of construction, by reduction in price of the raw materials, or by reduction in cost of garaging and servicing. However, unfortunately, in the past few years, no such factors have arisen which otherwise would beneficially have counteracted stagnation.

Even rubber chemistry has been affected by this process of stagnation. It is true that many patents are applied for in practically all countries, but they are coming less and less to the fore in practical work. The plant engineer and organiser have displaced the chemist in importance. To ration the manufacture of rubber products by employing highly productive plant and methods of production is now the first consideration.

Recipes of mixtures are no longer the secret of the few. Mixing processes have become standardised and chemical works are placing the knowledge acquired by systematic laboratory work at the disposal of their clients. Even now, however, the bases are not really scientific, as the chemical processes have in most cases not yet been completely established. The definite function of each ingredient forming the mixture is known, but it cannot always be fully explained.

At the same time, the quality and finish of rubber products has greatly improved, with the result that goods are placed on the market at much lower prices. Also the considerable increase in the life of these products (one need only think of motor tyres) has a direct bearing on the question of the industry's economic stagnation.

In the past few years, hardly one single new product has been developed which might expect a considerable market, or create a new branch of the industry. Latex sponge for use in upholstery was the last new product, and this development happened some time back. About ten years ago, in the field of rubber toys, one new development followed another in quick succession, but for some time past there has been no new product to give the market an upward swing. The same applies to technical products and surgical sports goods. It is characteristic that last year's *rubber age* prize competition, intended to elicit new uses for rubber, did not have any real result. The winning contribution dealing with the importance of rubber in sound insulation did not produce any really new idea, excellent though it was.

It is only in the large industrial countries that relative stagnation in the rubber industry has occurred. As a matter of fact, countries which hitherto have been importers of rubber goods, are now going ahead with developing an industry within their own borders.

It is interesting to note that the most important of these new industries have been financed by American, British and Italian capital. Smaller works are being financed on a national basis. South America contains mainly works financed by United States and Italian interests, and the same source of capital is found in tyre factories in Switzerland, Sweden and Rumania. French, German and Italian capital is active in Spain. Bata has erected rubber works in India, North Africa and the Dutch East Indies. National capital has started the works in Greece, Turkey, Bulgaria, Yugoslavia, Denmark and the Baltic border states.

In addition to development of this type, a new factor has entered the situation. For a long time it was looked upon as quite natural that raw material should be shipped to, and worked by, consuming countries. In the last few years, however, works have been erected in the plantation districts, and in the Dutch East Indies and Malaya. The underlying economic reason obviously is to save transportation and wage costs by eliminating trans-oceanic shipment from plantation to point of manufacture.

The rubber industry suffers, and always has suffered, from the tremendous fluctuations in the price of the raw material. The international regulation of new planting, production and export aims at stabilisation of price, but this does not appear to have been brought about, although the continuation of the export quantity has prevented fluctuations of too great a nature.

Rubber prices are not regulated by good or poor harvests, such as are grain or cotton rates. Other factors enter into the position. It is therefore quite a logical development that large consuming interests have decided to erect works on or near plantations. This new and revolutionary tendency started in England, was taken up by the U.S.A. and has since been followed by Italian and Czech manufacturers. It is not yet possible to ascertain what the effect of the development will be on the grouping and concentration of the rubber industry as a whole.

Questions of military policy and not economic considerations have led to investigation into the possibilities of artificial rubber. German, Russian, Italian and, more recently, American manufacturers have probed deeply into this field and erected factories for the large-scale production of synthetic material. It is well known, however, that artificial rubber is considerably more expensive than natural rubber, at the present time, and it is very doubtful whether manufacturing processes in existence will allow of a reduction in manufacturing costs necessary to enable the artificial material to take the place of natural rubber.

Quite apart from the fact that the artificial product has properties of its own, the main interest today lies in the possibility that it may lead to a stabilisation in the price of the natural raw material—an event which, as has already been stated, would be of the utmost importance. This is the reason why the larger manufacturers in the U.S.A. are aiming at producing their own artificial material.

It was at a relatively late date that the idea of standardisation came to be considered, and its occurrence was mainly due to the motor industry. Thus, for instance, in the U.S.A. even now there are 240 different sizes of tyres for agricultural tractors, and the idea of reducing this number to 128 is looked upon as a tremendous success for standardisation. There is no doubt that the war will bring about a very considerable reduction in the type of motorised vehicles (motor cars, motor cycles, tractors, etc.), at any rate in Europe, and this will be a permanent development.

International regulation, which will result in a considerable reduction in tyre sizes, must follow. This, in turn, will bring about standardisation of plant and reduction in its cost, and therefore a fall in the cost of tyres. Equally, the constant changes in tyre design which have been the custom in Europe, will probably before long, be a matter of the past.

It will have been noticed that tyre standardisation has been taken as the example. With the sole exception of fancy goods, most technical and surgical products are capable of being standardised internationally, and there is no doubt that this is well on the way.

It would seem that the rubber industry is at the end of a well-defined period. Hitherto, there has been every opportunity for fantasy and invention to have free rein, and periods of large profits have alternated with periods of heavy losses. Having established definite technical and theoretical bases, the industry is now coming of age, as it were, fully aware of its possibilities and limitations. The period of important invention has probably come to an end. Perhaps there now will begin an era in which works' rationalisation, organised on similar lines throughout the world, will allow rubber articles to be produced of a quality and at a price hitherto not thought possible.

We stand at the beginning of an epoch in which the use and manufacture of rubber no longer offer any difficulties.

—*Rubber Age.*

TEA IN AFGHANISTAN

Tea is among the articles in which there is scope for India to expand her markets, records the Indian Trade Commissioner, at Kabul, in his annual report. The imports into Afghanistan of black tea are almost entirely from India, while in regard to green tea Japan holds a predominant share in the Afghan market. It is understood that owing to the stoppage of imports from China a fillip has been given to the imports of green tea from India, which are steadily increasing.

A contributory cause for Indian tea gaining ground in Afghanistan is its cheapness. If suitable blends palatable to Afghan taste could be produced in India, it is hoped by the Trade Agent that she will be able to secure a much larger share in the Afghan market. This trade is entirely in the hands of Indian firms who have got their branches in China and Japan. Tea pays a customs duty of 35 per cent. *ad valorem* on imports into Afghanistan, subject to tariff valuations. There appears to be a big demand for sugar in the Afghan market, supplies coming chiefly from Russia and Java.

AMERICAN COFFEE SURPLUS PROBLEM

In the *Tea and Coffee Trade Journal* issue for August, it is stated that the Pan American Coffee Conference before its adjournment adopted a quota system, by which, according to a well-informed source, most countries will be permitted to increase their exports to the United States, while others, notably Columbia, El Salvador, Honduras, will have to lower them.

The proposed programme calls for the marketing of current crops in the most equitable and practical manner for the protection of countries already established in this market, while making allowance for the needs of other countries formerly dependent on European trade. The Pan American Coffee Bureau was empowered by the conference to work out the details in collaboration with representatives of the non-member countries, but it is understood that final action will wait upon what, if anything, is done at the governments' Havana Pan American Conference on the proposed cartel for American coffee control.

Meanwhile, just to make conversation, we offer the following design for solving the coffee surplus problem. We do not claim that it is perfect; perhaps not even practical in some of its aspects, but if any one of our readers knows of a 'better ole' we hope he will write us about it. Put in the form of a questionnaire and submitted to several of our editorial advisers in the trade it has already provoked violent controversy, but there must be some practical way out, and a general discussion might uncover it. Anyhow, here is a design to shoot at:

1. Establish a Coffee Cartel or its equivalent to restrict production, apportion marketing quotas and fix fair prices from planter to cup.
2. Increase the advertising funds so as to more effectively cover both the United States and Canada.
3. Offer coffee bonuses to coffee buyers.
4. Make gifts of coffee to worthy charities and war relief funds.
5. Purchase coffee for distribution to families on relief under the food stamp plan.
6. Demonstrations of proper coffee brewing under the auspices of the Pan American Coffee Bureau in Pan American cafes all over the United States, serving Pan American coffees, free with supplemental items (sugar, cakes, etc.), to be contributed by allied interests.

One trade authority who was frank enough to disagree most heartily with all but one item in the above programme said: 'There are only two ways of really solving the coffee surplus problem; one is to increase sales and the other is to decrease production. Both take time. In the meantime it may be necessary to develop some system of emergency financing for the countries in question.'

COCHIN PORT

Representatives of the European and Indian Chambers of Commerce met Sir Andrew Clow, Communications Member to the Government of India, last week and held detailed discussions with him regarding the future of Cochin Port.

Mr. J. E. Pitcairn, President of the European Chamber of Commerce, urged Sir Andrew for the immediate constitution, of a Port Trust and for increased representation to the Chamber on that body.

Representatives of the Indian Chamber of Commerce pleaded that restrictions on Willingdon Island should be removed, that the same facilities should be provided for railway passengers as those provided for steamer passengers on Willingdon Island, that wagon facilities for rice imports from mofussil districts in winter should be given and that work should be provided for unemployed labourers by undertaking works sanctioned on the Island.

Replying to these representations, Sir Andrew said that the restrictions referred to could not be removed under the existing conditions. Regarding facilities for passengers, he said they were the same as those in Bombay. He promised, however, to reconsider the point. The only work he could think of just then for unemployed labourers was that at the aerodrome and he promised to look into it.

VEGETATIVE PROPAGATION OF PLANTATION CROPS

The *Indian Journal of Agricultural Science* for August gives the following review of a bulletin entitled 'Vegetative Propagation of Tropical and Sub-tropical Plantation Crops' which has been issued as Technical Communication No. 13 of the Imperial Bureau of Horticulture and Plantation Crops:—

When in 1936 the Imperial Bureau of Fruit Production issued a technical communication dealing with the vegetative propagation of some 100 fruit varieties grown in the tropics and sub-tropics, it was not without misgivings as to the number of persons likely to be interested. That such fears were unwarranted was quickly shown by the demand in issue. This was immediate and so considerable as to necessitate the reproduction of the publication in the following year.

The present work by the renamed Bureau, which deals, appropriately enough, with the vegetative propagation of some 55 plantation crops, should form a useful companion volume. The help of technical experts has been invoked for adequate treatment of such major crops as rubber, coffee, cocoa, etc., while the foreign literature has been thoroughly combed for details of propagation of the less familiar, but nevertheless, important crops.

One feature of the previous work which commended it also to workers in temperate regions is retained and considerably enlarged. That is the section devoted to methods used in vegetative propagation. The descriptions there are supported by simple, clear line drawings of some 17 types of graft and 7 types of budding commonly used in vegetative propagation.

In addition, tropical workers will be glad of the account and illustrated detail of the construction of loosely-woven potting baskets which have been found so useful a substitute for pots in nursery work in the tropics.

For those who wish to study originals a list of references immediately follows the discussion on the propagation of each particular crop.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

SPECIAL APPEAL

The following is the second list of subscriptions promised or paid in response to the President's circular of 24th June 1940. The subscriptions received todate are from 129 individuals, 14 privately owned estates or groups of estates, 7 Planting Companies and 2 Firm Members.

Subscriptions Promised or Paid

	Rs.
Amount previously acknowledged in *Chronicle* dated 14-9-1940	5,717
Mr. W. K. M. Langley	100
,, A. V. Danagher	25
'Double or Quits'	15
Lt.-Col. C. H. Brock	100
Mr. C. C. Couchman	70
,, R. G. Foster	50
,, St. John Hunt (Second instalment)	25
,, R. W. Fremlin	25
,, J. H. Alexander (Second instalment) ...	50
,, E. H. Young (Second instalment)	105
,, G. V. R. Frend (Second instalment)	100
,, G. S. Homewood	50
,, G. W. Mayow	50
,, A. F. A. Burnett	25
,, G. Thompson	10
,, E. Studer	20
,, H. Watson (Second instalment)	50
,, W. H. Reed	25
,, H. Browne	50
,, A. Middleton	50
,, F. Cannon	25
Balur Estates, Ltd.	50
Mockett's Estates	100
Crawford Estates	100
Siddakhan Estate	50
Santaveri Estate	50
Mylemoney Estate	50
Chandrapore Estate	50
Hegoodloo Estate	50
Kalasa Tea & Produce Co., Ltd.	100
Parry & Co., Ltd.	50
Peirce, Leslie & Co., Ltd.	100
Total ...	7,487

FIRST COFFEE IN E. AFRICA

The man who planted the first coffee seed in East Africa died in Nairobi recently. He was Mr. John Patterson, a pioneer and missionary. Mr. Patterson brought coffee seed from Aden 45 years ago.

AMERICA'S RUBBER RESERVES

The text of the agreement under which the U.S. is to purchase further big quantities of rubber as reserve stocks was published in London in the last week of July.

The Rubber Reserve Company, specially formed for the purpose, is to acquire 100,000 to 150,000 tons of rubber before the end of this year and is to pay a price of 18c. to 20c. per pound, c.i.f. New York.

The text of the agreement on their behalf by Sir John Hay is published under the authority of the International Rubber Regulation Committee.

The memorandum of the agreement, dated June 29, 1940, between the Reconstruction Finance Corporation (herein called the 'corporation'), Rubber Reserve Company, a corporation created by the Reconstruction Finance Corporation (herein called the 'company') and the International Rubber Regulation Committee (herein called the 'committee') is as follows:—

1. (*a*) In order to aid in the National Defence Programme, the corporation agrees that it will make a loan or loans to the company upon satisfactory terms and conditions, in such amount as may be necessary, and the company undertakes, with the proceeds thereof, to acquire by purchase a reserve stock of crude plantation rubber (*Hevea Brasiliensis*) of a minimum quantity of 100,000 tons and a maximum quantity of 150,000 tons for shipment prior to December 31, 1940, such rubber to be designated a reserve stock.

(*b*) In addition, the rubber manufacturers, as represented by the Rubber Reserve Company, will endeavour to continue their current purchases of crude rubber within the range price hereinafter mentioned in such volume as will be necessary to meet current requirements and to maintain within the United States during the period that the reserve stock is being accumulated a normal stock for current requirements and purposes. Such a stock shall be interpreted as a quantity of plantation rubber of 150,000 tons and shall be in addition to the reserve stock above referred to.

(*c*) To the extent that the manufacturing rubber industry fails to maintain its stock at the figure aforementioned, the Rubber Reserve Company to that extent undertakes to increase its purchases above the maximum of 150,000 tons, provided that any rubber so purchased above said maximum may be released to manufacturers within the United States and shall not be subject to the provisions of paragraphs Six and Seven hereof.

2. In consideration of the undertakings above described, John George Hay, Kt., agrees, on behalf of the Committee that the Committee in exercise of the powers conferred upon it by Article IV, Treaty Series No. 74, 1938, will permit the release of the quantity of rubber which may be necessary for the accomplishment of the purposes herein described, as well as for all other known demands.

3. If, notwithstanding the action of the Committee, acting in full accord with the provisions of this agreement, the supply of rubber or the facilities for the transportation thereof should be inadequate for the accomplishment of the purposes herein set out within the period named, purchases shall continue nevertheless for shipment subsequent to December 31, 1940, as may be necessary for the accumulation of the reserve stock of crude plantation rubber of 150,000 tons.

4. (*a*) It is understood that during the period necessary for the purchase and accumulation of the reserve stock of rubber hereinabove mentioned, such rubber shall be purchased at not less than 18 nor more than 20 cents (United States dollars) a pound c.i.f. New York for standard smoked sheet, packed in cases or in bales at seller's option, with the usual

differential for other qualities and other forms of purchases, *exempli gratia*: Ex. godown, f.o.b., landed.

(*b*) Purchases, sales and deliveries shall be made under contracts adopted and now in use by recognised Rubber Trade Associations, and any claims or disputes arising regarding insurance, shipment, packing, quality, payment, freight and cognate matters shall be settled in accordance with the recognised customs of the rubber trade.

5. The Committee, represented by John George Hay, Kt., undertakes to encourage producers of rubber to be ready sellers at the range between the two prices mentioned in paragraph four hereof, 18 to 20 cents per pound c.i.f. New York, payable in dollars, New York Exchange. The company undertakes to use its best endeavours so to arrange its purchases that the market price will be maintained within the range specified.

6. The company agrees that as the reserve stock is acquired it will be held separate from the normal trade stocks and will not be disposed of (otherwise than for the purpose of replacement through equivalent quantities as may be expedient for the prevention of deterioration and in such manner that the quantity thereof will at all times be maintained intact) except as required by the Government of the United States of America for its defence programme, or in the event of normal supplies being interrupted through hostilities, or any similar emergency. In such latter event, releases from the reserve stock will be permitted only to the extent necessary to maintain trade stocks at their normal level.

7. Subject to the provisions of paragraph six, the company agrees that the reserve stock shall be held intact until December 31, 1943, thereafter to be liquidated at not more than 100,000 tons per annum and in such manner as least to disturb the world price of crude rubber. The company undertakes to inform the Committee of its intentions to liquidate the reserve rubber supply in accordance with this provision and to keep the Committee informed as to the progress of such liquidation.

8. In the event of circumstances under which the decisions of the Committee, through causes beyond its control, cease to be operative in the territories of the Netherlands East Indies or in the territories commonly known as British Malaya, then the Committee agrees to consult immediately with the corporation and the company for the purpose of determining what action shall be taken with respect to the provisions of this memorandum.

PRICES OF COMMON TEAS—AUGUST 1940

	Wholesale (Selling prices of Dealer to Retailer)			*Retail (Selling prices of Retailer to Consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Bangalore	0	8	1	0	8	8
Trichinopoly	0	7	8	0	8	5
Srirangam	0	7	4	0	8	2
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	6	0	9	0
Tanjore	0	8	6	0	9	3
Tiruvarur	0	8	6	0	9	2
Pudukottah	0	8	0	0	8	6
Karur	0	8	4	0	9	7
Erode	0	8	1	0	8	7
Tiruchengodu	0	8	3	0	8	9
Namakkal	0	8	1	0	8	7
Salem	0	8	1	0	8	9
Dharmapuri	0	8	1	0	8	7

U. K. PURCHASE OF DUTCH TEA

The Ministry of Food announced on July 13th that an agreement had been entered into to purchase 40,000,000 lb. of tea from the Netherlands East Indies, and the price to be paid will be 7¼*d.* a lb. f.o.b. Batavia. The Ministry in making the announcement stated that stocks of tea, for the conservation of which rationing has recently been introduced in the U.K., will be materially strengthened when these new supplies arrive. A considerable proportion of the purchase will be completed by the end of the year.

Since the outbreak of war the Ministry of Food has become controller of the tea trade in this country and since January has prohibited the importation of non-Empire tea, except under licence, which has been sparingly granted. The arrangements made by the Ministry with the Empire Producers are embodied in the 'Long Term Contract', details of which have already been in these columns.

Purchases had been restricted to Empire countries, India, Ceylon and East Africa, not merely in order to maintain trade with the Empire but to conserve foreign currency. The exclusion of Java and Sumatra tea has caused hardships to British-owned estates operating in these areas, particularly since the invasion of Europe by Germany. The loss of these markets to the tea industry is estimated at some 50,000,000 lb. a year, and it was because of this loss that the International Tea Committee decided last week to reduce the export quota by 5 per cent. to 90 per cent. for the year ending March 31, 1941.

The consumption of Java and Sumatra tea in the United Kingdom has been steadily falling since the preferential import duty was imposed. Whereas only 13.7 million lb. of Netherlands teas were consumed in this country in 1938, the proportion was very much larger in 1931 when 78.5 millions were consumed.

The closure of the U.K. market has caused marketing difficulties in the Batavia market which has been overflowing, and that market will be considerably relieved by the arrangement to ship 40 millions to this country. The purchase of this tea will have no repercussions on the Empire tea trade as approximately 90 per cent. of the Empire production during the current year has been sold to the Ministry of Food at stable prices.

At this period of the year stocks of tea in the U.K. are at their seasonal low level, and with the arrival of the new season's crop from Northern India coming forward in increasing quantity over the next few months stocks will be considerably augmented. The purchase of the N.E.I. tea will help to swell the stock position, giving hope that at a later date the ration of 2 oz. a week may be increased.

The contract price of 7¼*d.* a lb. for the Dutch teas will assist blenders in keeping down the price of their packets.

—*T. & R. Mail.*

FIGHTING 4 O'CLOCK FATIGUE

In many parts of the world today 4 o'clock tea for employees has become an established institution and its great value is recognised by business executives. A recent and very significant outcome of the popularity of 4 o'clock tea is the formation in America of a company under the name of Tea Time Inc., which under the guidance of the Tea Bureau Inc., New York, are now serving tea to many large offices in New York.

—*Commerce & Industry.*

INDIAN RUBBER LICENSING COMMITTEE

ANNOUNCEMENT

All rubber producers are hereby informed that in view of the recent revisions in the permissible export percentage of rubber, bringing the average allotment for the year to 83¾%, it has been decided by the Indian Rubber Licensing Committee, after due consideration of all relevant facts, to make a further allotment of 2% of each estate's basic crop for 1940 in addition to the 80% already allotted during the year. The said allotment of 2% will be available for use as from Thursday the 10th October 1940.

Producers are reminded that the last dates for accepting transfers for registration and applications for licenses are the 15th and 17th of December respectively.

They are also reminded that they can carry forward 10% of their allotted quotas from any one year to the subsequent year.

The Indian Rubber Control Act, 1934, amended up-to-date and Rules thereunder, together with the Travancore Rubber Control Act 1115, have been got printed by the Licensing Committee and copies will be available in the Committee's office at the nominal price of two annas per copy.

Rubber Control Office,
Malankara Buildings,
Kottayam, Travancore.
1st October, 1940.

(By Order) P. KURIAN JOHN,
Rubber Export Controller for India.

U. P. A. S. I. WAR FUND

With a view to saving postage on War Fund Account, it is proposed not to send out receipts in future in acknowledgment of subscriptions to the Fund received through Bankers' Orders. In such cases, since the subscribers pay through their Banks, the debits in their Bank Pass Books should be considered sufficient acknowledgment. If any members wish to have separate receipts sent to them, will they kindly inform the Secretary, U.P.A.S.I., to that effect?

TEA QUOTA PRICES

The Quota prices ruling in South India on 8th October were:—

Tea Export Rights ...	... 9 annas 6 pies per lb.
Internal Market Rights	... 1 anna 6 pies per lb.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 30th September were:—

Rubber, including export licenses	... 54.50 cents a lb.
Rubber Export Quota ...	... 6.50 cents a lb.
1st quality rubber alone ...	... 47.50 cents a lb.

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1940 *to* 31-7-1940									
Madras	4	2	20	964	...	...	...	990	112
Calicut	...	11,300	1,529	200	...	910	914	14,853	...
Cochin	...	4,585	15,148	70	...	...	751	20,554	...
Mangalore	...	16,684	15,451	15,036	200	925	4,074	52,370	...
Tellicherry	...	2,452	...	64	...	...	659	3,175	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	111	...	...	...	...	...	...	111	...
Total ...	115	35,024	32,149	16,360	200	1,835	6,398	92,081	112
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1940 *to* 31-7-1940									
Calicut	2,19,488	3,61,827	...	...	...	7,79,520	...	13,60,835	...
Cochin	17,54,351	79,62,389	1,85,392	68,323	43,904	13,48,768	...	1,13,63,127	...
Mangalore	5,097	69,216	...	...	...	49,280	...	1,23,593	...
Tuticorin	2,09,334	8,960	...	...	...	...	...	2,18,294	...
Alleppey	1,71,560	1,79,200	...	56,000	...	5,09,600	...	9,16,360	1,66,208
Total ...	23,59,830	85,81,592	1,85,392	1,24,323	43,904	26,87,168	...	1,39,82,209	1,66,208
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1940 *to* 31-7-1940									
Madras	24	49,271	450	2,081	...	...	...	51,826	22,680
Calicut	4,900	21,06,910	2,33,061	...	...	3,978	7,020	23,55,869	29,523
Cochin	6,48,794	,36,75,715	43,456	2,076	...	70,076	3,049	1,44,43,966	67,965
Mangalore	4,260	55,345	...	...	...	...	...	59,605	15,874
Tellicherry	...	3,69,938	550	...	...	...	...	3,70,488	7,420
Tuticorin	6,39,903	33,00,933	...	...	...	...	...	39,40,836	...
Alleppey	...	20,899	...	...	...	...	...	20,899	...
Dhanushkodi	4,26,715	...	...	...	...	...	...	4,26,715	...
Total ...	17,24,596	1,95,79,011	2,77,517	4,157	...	74,054	10,069	2,16,69,404	1,43,462

MARKET REPORT AND PRICES

Calcutta *(Issued by the Calcutta Tea Brokers' Association).*

Sales Nos. 15 and 16 were held on 23rd and 24th September and 1st and 2nd October, 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 15	Sale No. 16	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	13 2	13 6	12 2	11 3	9 4
For Internal Consumption:—					
Leaf Teas ...	3 10	4 0	3 10	4 11	4 1
Dusts ...	4 10	4 10	4 9	4 6	4 3
Green Teas ...	6 6	6 3	6 7	5 5	6 7

RUBBER—London Rubber on October 7, 1940, 11⅞*d.*

Colombo *(Issued by the Colombo Brokers' Association).*

Average prices obtained (in cents.)

SOUTH INDIAN TEA SALES	Sep. 24 & Oct. 1, 1940
Vagavurrai ...	91
Vellamalai ...	84

RUBBER SALES	Sep. 26, 1940
Ribbed Smoked Sheet ...	55½
Contract Crepe ...	52½
Mottled Brown Latex Crepe	49 to 52
Brown Scrap Crepe ...	45

Madras *(As on 10th October 1940. Issued by Messrs. Paterson & Co.).*

During the past fortnight markets have continued to rule very steady. Following the redemption of the 5% 1940/43 Govt. of India Loan considerable funds have been released for reinvestment. This has resulted in firmer conditions in exisiting Government issues while a considerable inquiry has also been in evidence for first class Debentures and preference shares of industrial undertakings. The Calcutta Stock Exchange is now closed until the 21st instant owing to the Puja Holidays.

RUBBER

The price for Spot Rubber has remained unaltered for the greater part of the fortnight under review at a little under 1*s.* per pound. The price in India is slightly lower at 47 cents for uncouponed rubber and 6 cents for the rubber coupon. On the local Stock Exchange a wider list of transactions has been reported than for some considerable time. Interest has to some extent been confined to the more speculative issues and a certain amount of business has been possible in those shares standing at a considerable discount notably Be Be Rubbers at Rs. 3-12 as., Midlands at Rs. 4-4 as. to Rs. 4-6 as., Rajagiris at Rs. 4-5 as., and Cottanads at up to Rs. 3-5 as. Shares already on the dividend paying list however have met with fair support. Cochin Malabars had ready buyers up to Rs. 6 and Thirumbadis at Re. 1-7 as. ex dividend. Malankaras have also attracted a fair amount of buying at up to Rs. 28 while Coorgs have advanced to Rs. 27 and Kalpettas to Rs. 16-12 as. ex dividend.

TEAS

The leading counters have continued to meet with good investment inquiry. Periakaramalais show a gain of nearly 8 as. at Rs. 17-2 as. ex dividend; Highland Produce were unchanged with good buyers at Rs. 25-4 as. to Rs. 25-8 as., while Peermades show a gain of Re. 1 at Rs. 25. Small business has been reported in Vellamalais at Rs. 10-8 as. and Chembra Peaks at up to Rs. 3-1 as. Speculative interest was also shown in Nilgiri Neergundis at Re. 1-2 as., Kalasa Teas at Rs. 5-8 as. and Balanoor Tea Ordinaries at Rs. 7-10 as. Among Fixed Interest Securities, Ouchterloney Valley 6% debentures changed hands at up to Rs. 103-8 as.

FORTNIGHTLY RAINFALL STATEMENT

September 15, 1940 *to September* 28, 1940—(*Inclusive*).

(*Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.*)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	0·26	1·91	92·49	94·66	25. Kotagiri ...	0·08	...	32·12	32·40
3. Kallar B'dge	1·04	0·97	113·74	115·75	26. Ootacamund...	...	...	32·26	32·26
4. Koney ...	0·53	2·40	92·70	95·63	27. Yercaud ...	...	...	40·41	40·41
8. Twyford ...	1·49	3·49	212·31	217·29	30. Devarshola T.E.S. ...	0·20	1·96	61·70	63·86
9. Pettimudi ...	1·09	2·94	284·81	288·84					
10. Kalaar ...	1·23	4·21	224·22	229·66	31. CALICUT ...	2·12	...	105·86	107·98
11. Chittavurrai...	0·04	3·22	39·05	42·31	32. Kuttiyadi ...	1·94	...	113·71	115·65
12. BODI'KANUR ...	...	...	11·51	11·51	33. Vayitri ...	1·71	...	147·52	149·23
13. COCHIN ...	1·38	...	100·46	101·84	34. Manantoddi...	0·40	...	102·36	102·76
14. Mooply ...	0·51	0·22	113·26	113·99	35. Bilgiris ...	0·06	3·76	52·57	56·39
15. Pachaimallai	0·54	3·57	117·86	121·97	38. Pollibetta ...	0·36	1·18	58·78	60·32
16. Mudis ...	0·92	7·18	173·11	181·21	39. Coovercolly ...	0·08	N.R.	69·70	69·78
17. POLLACHI ...	...	...	25·17	25·17	41. Kadamane ...	3·09	1·06	234·41	238·56
18. Ropeway Waterfall ...	0 17	1·05	65·60	66·82	43. Merthisub'gey	0·90	2·20	114·84	117·94
					45. Balehonnur ...	0·85	0·56	107·22	108·63
21. Kerala Estate	0·50	2·26	140·79	143·55	46. MANGALORE ...	2·28	...	126·39	128·67
22. Naduvattam	0·14	...	95·30	95·44	47. MADRAS ...	0·46	...	13·38	13·84
24. Coonoor ...	...	...	26·51	26·51					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor, ' Glenview ', Coonoor, Nilgiris

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EDITORIAL

The President of the Indian Coffee Cess Committee, Rajamantrapravina N. Madhava Rau, gave a stirring address at the Annual Meeting of the Committee held at Bangalore on 15th October. While making no attempt to minimise the serious position of coffee marketing prospects, he gave a most encouraging account of the steady progress being made in their propaganda work, both in India and the United Kingdom, and dwelt at length on the proposed scheme for the control of coffee marketing, which is now receiving the consideration of the Government of India as an urgent measure, vitally necessary to preserve the Coffee Industry in India, which is being jeopardised by the loss of all its European markets caused by war conditions.

The Annual Report of the Coffee Cess Committee was also presented at that meeting. It makes interesting reading, and gives a full account of the work of the Committee during the past year, including chapters on Advisory Work, Propaganda in India, Overseas Propaganda and Technological Research. The Accounts show that the available balance of funds has increased by some Rs. 32,000, but, with the prospect of greatly diminished exports in the approaching season, there is a serious danger of a shortage of funds, which may not only prevent a continuance of the present expansion in the Committee's activity, but may compel a curtailment of their propaganda efforts. The speedy establishment of the proposed Marketing Control Board is the only hope the industry has for improving the present situation.

* * * * * *

In connection with the U.P.A.S.I. War Fund, the contributions to which, as our readers are aware, are allotted to H.E. The Viceroy's War Purposes Fund and the U.P.A.S.I. War Fund in the proportion of three to one, the Executive Committee have made a decision which we feel sure will meet with the full approval of all the subscribers to this Fund. All subscriptions received are to be allocated without any deduction whatsoever for collection and forwarding expenses. The amounts already so charged to the Fund are to be written back, and the whole cost of administering the Fund will be met by the Association. Actually, the amount involved is very small, but the mere fact that any expenses at all were being charged to the Fund appeared to be unpatriotic in principle, and we wholeheartedly applaud the action taken by the Executive Committee.

* * * * * *

While on the subject of War Funds, we would draw the attention of all estates in South India to a communication received from the Secretary, U.P.A.S.I., which appears elsewhere in this issue. Many estates are receiving appeals direct from the War Fund Committees in the various provinces and states in which they are situated. There is a danger of people feeling rather overwhelmed by the multitude of appeals which are being made to them. The Executive Committee's present proposal, following the lines of that already adopted by North Indian Tea Estates, provides a central channel through which war fund contributions from the planting industry can flow to the main territorial collecting centres, and thereby emphasise the splendid efforts that the Industry is making as a whole.

* * * * * *

At the last meeting of the Executive Committee of the United Planters' Association of Southern India various measures were discussed with a view to saving of paper and curtailment of expenditure during the period of the war. In this connection it has been decided to discontinue sending out cyclostyled copies of proceedings of Committee Meetings to Product Section Members. So as to comply with the provisions of the Article of Association No. 8 the Committee have resolved to print a summary of the proceedings of all Committee Meetings in the *Planters' Chronicle* copies of which are sent to every member of the Product Sections. A notice to this effect appears elsewhere in this issue.

* * * * * *

We must express our grateful thanks to Messrs. Harrisons & Crosfield, Ltd., for so generously giving a large portion of their advertisement space on the front cover of this issue to the Southern India Planters' Benevolent Fund. In this space we are displaying a reminder to our readers that a sustained effort is necessary on the part of all members of the Industry in order to reach the goal aimed at in the Special Appeal for Rs. 15,000 additional donations, over and above the ordinary annual subscriptions to the Fund, in order to win the magnanimous offer of that anonymous benefactor, who has promised to double this amount, provided we can reach this total on or before the 31st March next.

With this reminder we are giving a 'Thermometer' showing the amount of donations received, and the distance yet to be climbed to reach 'boiling-point'. We hope to continue this pictorial progress in each issue, and we would appeal to other advertisers, who hold prominent space positions in the *Chronicle*, to emulate the laudable lead given by Messrs. Harrisons & Crosfield, Ltd., by offering the Benevolent Fund space on their advertisement pages for the same purpose.

It is very pleasing to see that the thermometer is warming up steadily, but we should like to see a real heat wave which will bring the mercury to the top by Christmas time. The sooner the better!

INDIAN COFFEE CESS COMMITTEE

The Seventh Meeting of the Indian Coffee Cess Committee was held at Bangalore on the 15th October, presided over by Rajamantrapravina N. Madhava Rau, the Chairman of the Committee.

Mr. N. Kirwan was elected the Vice-Chairman of the Committee for the coming year, 1941-42. In addition to the Chairman and the Vice-Chairman, who are *ex-officio* members, Diwan Bahadur K. Chengappa, Dr. F. X. DeSouza, Mr. L. P. Kent, Sri T. A. Kylasam Pillay, Mr. W. K. M. Langley, Mr. Sylvester Pai and Mr. E. H. Stanes were elected on the Executive Sub-Committee which would take office on the 1st April 1941.

The meeting devoted considerable time to the consideration of the proposals for the control of the marketing of coffee made by the Conference of Coffee Merchants and Planters, convened by the Hon'ble Diwan Bahadur Sir A. Ramaswamy Mudaliar, on the 19th September at Madras. A reference had also been received by the Committee in the same connection from the Government of India asking for the views of the Committee on the proposed scheme, as well as a few specific points arising out of it. The Committee generally accepted the proposals of the Conference with a few modifications, designed to simplify the administration of the scheme. The Committee fully agreed with the views of the Conference that the control should be established as early as possible in the current season itself.

As usual, the Market Expansion Sub-Committee had met two days before the meeting of the Indian Coffee Cess Committee and reviewed the progress made by the propaganda schemes in operation in India and made its recommendations in regard to future programme of work to the Executive Sub-Committee, which met on the 14th October, under the Chairmanship of Mr. N. Kirwan, the Vice-Chairman of the Committee. The report of the Executive Sub-Committee, presented to the Indian Coffee Cess Committee, showed the extent to which the income of the Committee from the cess of Re. 1 per cwt. levied on all coffee exported out of India had been affected by war and the need to adopt a cautious programme of work within the means of the Committee both in India and the United Kingdom. Expansion of the activities of the Committee was hardly possible under the existing conditions and what could be attempted was only the continuance of the present activities considered essential. The Committee adopted the report of the Executive Sub-Committee and placed at the disposal of the Market Expansion Sub-Committee a sum of Rs. 58,800 for propaganda work in India during 1941-42 and another sum of Rs. 28,000 at the disposal of the Indian Coffee Market Expansion Board, London, for propaganda work in the United Kingdom.

—*Indian Coffee Cess Committee Communique.*

COMPANY NOTES

ATCHENCOIL TEA

The sixth annual general meeting of the shareholders of the Atchencoil Tea Company (1941), Limited, was held at Colombo, on Thursday, June 6th.

The Report and Accounts for the year ended 31st March, 1940, were carried unanimously and a dividend of 10 per cent. was declared.

Mr. A. W. Buxton was elected a Director for the current year.

PROVINCIAL AND STATE WAR FUNDS

It has been brought to the notice of the Executive Committee of the U.P.A.S.I. that estates in different districts are being appealed to by their respective Provincial and State War Funds for contributions.

Doubtless a certain number of estates have already responded to such appeals direct. The Committee, however, would suggest to all other estates in Southern India to consider the advantages, from the point of view of the whole planting industry, of the Association acting as a clearing house for all War Purposes donations, both from the aspect of ensuring the widest publicity possible in broadcasting the appeals, but also in enhancing the prestige of the South Indian Planting Community, as a whole, in showing how splendidly they can and are doing their bit for the benefit of all those who have been called up for National Service.

Our sister Tea Association in the North has set a fine example in inaugurating a scheme for all Tea Estates in Assam and Bengal to contribute to the War Purposes Funds in those Provinces by subscribing a fixed amount per acre of Tea, and the Executive Committee of the U.P.A.S.I. have decided to follow that example.

The scheme is simply this—to appeal to every estate in South India to send in a donation, at a fixed rate per acre for each product respectively, and to pass on the full amounts received to the War Purposes Fund of that Province or State in which that particular estate is situated. In forwarding these donations the names and amounts of the donors will be notified to the respective Fund Committees, and they will also be acknowledged in the *Planters' Chronicle* under the headings of Provinces and States, i.e. Madras, Coorg, Mysore, Travancore and Cochin.

The Association will bear the whole of the expenses incurred in the collection and forwarding of these subscriptions, the whole of which will go to the respective Funds.

There will be a short delay before these acreage subscriptions will be asked for from all estates, as the Committee of the Product Sections are being asked, first, to fix the rates per acre for Tea, Rubber and Coffee and Minor Products respectively.

In the meantime, the Executive Committee would suggest that all estates, which have not already subscribed direct to their local War Funds, wait until the Product Committee have agreed on the acreage rates to be asked for. This will be completed very soon and, directly the rates have been decided upon, every member of the Association will be appealed to.

It is to be noted carefully that this proposal does not in any way clash with or overlap the existing U.P.A.S.I. War Fund. That fund is a continuous one, to which a number of individual planters are subscribing monthly on the basis of a half day's pay a month or more, others have given donations, as also have some firm members. A few private owned estates and estate companies, mostly small ones, have also given donations. Thus, that fund is mainly one for individual managers, superintendents and assistant superintendents, that is to say, a *personal* fund for the duration of the war, and, as such, though 75% of it does go to H.E. The Viceroy's Fund, one quarter very rightly is retained for relieving distress, among planters and/or their dependents, caused by National Service in this War, as was done during the last Great War.

The estate acreage collection now proposed is purely, so to speak, the effort of the Industry in supporting the War Purposes Funds in their own Provinces and States, and is for estates only. Of course it is open for estates to support both this and the U.P.A.S.I. War Fund if they possibly can, but it is this Fund which is especially to represent the planted area contribution to local War Funds.

COONOOR,
17th October 1940.

C. H. BROCK,
Secretary.

VICTORIA RUPEES AND HALF RUPEES

The Government of India have, for some time, had under consideration the question of withdrawing from circulation Victoria Rupees and Half Rupees, which are definitely unpopular owing to the large number of counterfeits in existence, which are difficult to detect, owing to the worn condition of the coin.

Though the amount of Victoria coin in circulation at the present time is small, large amounts probably still form part of hoards and to that extent add to the inconvenience caused to the public by the hoarding habit.

In view of the unsuitability of the coin as a medium of currency, and in order to recover it from uneconomical hoarding, Government have decided to call in all Victoria Rupees and Half Rupees.

An ordinance has accordingly been promulgated amending the Indian Coinage Act, and by a notification issued under the Act as amended, it has been declared that Victoria Rupees and Half Rupees shall cease to be legal tender after March 31, 1941, but shall continue to be acceptable till September 30, 1941, at all Government Treasuries and Post Offices and thereafter, until further notice, only at the offices of the issue department of the Reserve Bank at Bombay and Calcutta.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

SPECIAL APPEAL

The following subscriptions have been received from 7th to 22nd October inclusive. Todate 125 individual members of the Fund have given generous donations. Over 100 members of the Fund have gone on Military Service and this means that all the remaining individual members with the exception of less than 20 have responded to the President's Appeal. There are 116 Estates and Companies which are members of the Fund, of which less than half have not yet responded to the Appeal.

	RS	A	P
Amount previously acknowledged on 12-10-1940 ...	**7,487**	**0**	**0**
Poonmudi Tea & Rubber Co.	**400**	**0**	**0**
'A Mysore Planter' ...	**100**	**0**	**0**
E. E. Ranicar ...	**20**	**0**	**0**
Major Edgington ...	**100**	**0**	**0**
E. H. Francis ...	**132**	**10**	**0**
Nelli. Hills (Cochin) Est. Ltd.	**100**	**0**	**0**
H. Gerry ...	**30**	**0**	**0**
E. Hardy ...	**25**	**0**	**0**
Southern India Tea Est. Co., Ltd. ...	**306**	**6**	**0**
R. J. A. Moore ...	**100**	**0**	**0**
A. G. Cogman ...	**25**	**0**	**0**
Stagbrook R. & T. Est. Ltd.—			
Eldorado Group ...	**158**	**7**	**8**
Stagbrook Estate ...	**80**	**11**	**0**
G. C. Jack ...	**15**	**0**	**0**
A. R. St. George ...	**15**	**0**	**0**
C. R. T. Congreve ...	**270**	**8**	**0**
J. D. Manning ...	**25**	**0**	**0**
Travancore Tea Est. Co., Ltd. ...	**751**	**12**	**0**

STANDARDIZATION OF HEALTH RETURNS

The Executive Committee of the United Planters' Association of Southern India have been examining a scheme for the standardization of health returns from estates, the adoption of which was strongly advocated by Sir Malcolm Watson, Director of the Ross Institute of Tropical Hygiene, in his speech at the Annual General Meeting of the Indian Tea Association held in Calcutta last March.

This scheme was drawn up by Dr. B. A. Lamprell and has been adopted by the Assam and Northern Bengal Branch of the British Medical Association, and, under the instructions of the Executive Committee, a summarized explanation of its working is given here.

The Committee recognise that the adoption of the system of standardization suggested is one that must be left to the individual discretion of estate proprietors. At the same time they strongly recommend its adoption by all estates or groups of estates in South India which have their own dispensaries or hospitals.

In his memorandum on this scheme for health returns, Dr. Lamprell points out that the purpose of health returns is to provide figures representing the state of health of the population in a form that is comparable over different periods. If effective comparison does not exist, it is impossible to forecast or assess the result on health of any sanitary measure. In other words, it is quite impossible for those concerned with the finance of an industrial undertaking to know accurately what proportion of the cost of production is due to sickness of the labour force, what fraction of that proportion is due to any particular disease, and whether the cost of controlling any disease would be offset by a corresponding or greater reduction in the losses caused by the disease.

Control of sickness by preventive measures is a source of direct benefit to producing concerns by reducing the cost of production of the article produced, but control should not be haphazard nor regarded as a form of philanthropy. Every scheme of control must satisfy the provision that it will, if successful, effect a saving and, it must be possible, after the scheme of control has been instituted, to assess its practical results. These desiderata can only be fulfilled if accurate and easily comparable returns are available.

The system recommended consists of detailed Monthly and Annual Health Returns providing information concerning 29 diseases and groups of diseases (and other causes of invaliding) together with summarised Monthly and Annual Returns in which the information is condensed in such a way that all causes of invaliding are reduced into six main groups. In order that the figures to be incorporated in these returns may be easily available, the system includes an attendance register, daily report forms and daily abstract sheets. It is the opinion of the Assam Branch of the British Medical Association that the adoption of this system will not increase the clerical work of the hospital staff and will, in many cases, make more easily available to the manager of the estate, information regarding the way in which the duties of the hospital staff are being carried out. In experimental use in two groups of estates in North India, it has been found to work well, no special difficulties having been encountered.

The method of recording the daily attendance is of importance if the figures required for the Monthly Report are to be obtained with the minimum of clerical work. The following forms are recommended:—

I. The *Attendance Register* is ruled for the name, age, sex and line or gang of the patient, the disease and the treatment, with 31 vertical columns, for the days in the month. Each day this Register is called, and a mark placed in the column of the day for all present and new cases for the day are added. This system is a considerable saving in work and time on the common practice of rewriting all cases each day.

II. *Daily Report Form* in foil and counterfoil. As each person presents himself and has a mark placed against his name in the 'Attendance Register', a mark is placed in the appropriate column in the 'Daily Report Form' against the disease which is the cause of his attendance. At the end of the day the totals are made up, the counterfoil is sent to the Medical Officer, through the Manager, and the foil is kept in the hospital for use at the end of the month in preparing the Monthly Report.

III. *Daily Abstract Sheets.* If for any reason 'Daily Report Forms' are not used in the manner suggested, an alternative method of recording the day's figures is to maintain three 'Daily Abstract Sheets'. If this procedure is used, then two 'Attendance Registers' should be kept, one for sick workers and their attendants and one for sick non-workers and their attendants. Distinguishing marks should be placed against patients and attendants so that the total of each can be quickly computed.

IV. The *Detailed Monthly Report Form* contains columns and spaces for:—

1. Classification of causes of sickness and death under the 29 headings in six main groups as mentioned above.
2. The number of working days in the month.
3. The average daily labour force.
4. The number of new cases in the month.
5. The number of working days lost due to Sickness, i.e. the number of days lost by labourers on account of their personal incapacity due to sickness.
6. The number of working days lost due to Attendance, i.e. the number of days lost by labourers on account of bringing their sick children to hospital or attending in hospital on some sick relative.
7. The total number of working days lost.
8. The Case Incidence per 1,000 Population.
9. Daily average of working days lost per 1,000 labourers. This figure may be shown for each of the 29 headings if so desired or only for the six main groups.
10. Deaths in the Population.
11. Analysis of Death in Age Groups.
12. Births.
13. Further details of Morbidity or Mortality. Here space is allowed for recording sickness and death due to diseases of special economic importance or medical interest which would otherwise be lost under the group headings.
14. Report of any investigation undertaken to measure health. Here should be shown Spleen Rates, Parasite Rates or the results of any investigation undertaken during the month.
15. Report on any important environmental conditions, i.e. excessive rain or heat, or any condition which may be responsible for ill health.

16. Information of any special activities undertaken for protection, i.e. notes on malaria control measures, measures to purify water, control food or milk, any mass treatment for Helminths, Malaria, Vaccination or Innoculation.
17. The relationship between morbidity and environmental factors.
18. Special Notes.
19. Spleen Rate.
20. Cause of Death.

V. The *Summarised Monthly Report Form* is devised primarily to summarise in a convenient manner the figures of greatest economic importance to the Industry and may be of some Medical value in showing at a glance the relative degrees of Malaria, etc.. in different groups on one Estate or Division.

VI. The *Detailed Annual Return* contains the following:—

1. Section A.—The number of working days, new cases and lost working days during the year, which are obtained by the simple addition of the corresponding figures in the twelve Monthly Reports. These also give the material for working out the average daily labour force, average daily population, case incidence and average daily lost working days per 1,000 labourers in the year.
2. Incidence of Death per 1,000 Labourers.
3. Death Rate (per 1,000 population).
4. Birth Rate.
5. Maternal Mortality Rate.
6. Deaths under 1 month per 1,000 Live Births.
7. Deaths 1-12 months per 1,000 Live Births.
8. Infant Mortality Rate.

VII. The *Summarised Annual Report* is intended as a convenient abridged form on which can be shown the figures of greatest economic importance to the Industry. All figures can be readily extracted from the Detailed Annual Report.

Complete details of this scheme, together with full sized specimens of the forms described above, are in the hands of the members of the Tea Product Section Committee. A few copies are still available in the Secretary's Office. It is too bulky a document to circulate to all members of the Association but such members as have dispensaries or hospitals, and who are particularly interested, may obtain copies from the Secretary. It may be possible to obtain further copies if the present small stock is exhausted.

COONOOR,
18th October, 1940.

C. H. BROCK,
Secretary.

TEA QUOTA PRICES

The Quota prices ruling in South India on 23rd October were:-

Tea Export Rights	...	**9 annas 6 pies per lb.**
Internal Market Rights	...	**1 anna 9 pies per lb.**

THE POSSIBILITY OF REDUCING THE STRENGTH OF BORDEAUX MIXTURE FOR THE CONTROL OF COFFEE LEAF DISEASES

Second Report

In the *Planters' Chronicle* of March 2nd 1940, a short note was published on the possibility of reducing the strength of Bordeaux mixture for spraying with a view to economy and the conservation of Copper Sulphate supplies. The experiment described in that note was continued during the hot weather spraying season and a second experiment of the same type was initiated on an estate in Coorg. Observations were carried out in both experiments in mid-September to estimate the relative effectiveness of the three strengths of spray tested and the results are published in this note in view of the need for further information on this subject.

The experiments both consisted of six randomized blocks of three spray treatments—2-2-40, 1½-1½-40 and 1-1-40—carried out with uniform nozzles, pressures and volumes of spray in the hot weather. Observations were carried out by the method previously described, from which two figures were obtained, one, an estimate of the leaf retained on the tree and the other, of the percentage infection of the leaf present. These two figures were combined to give a third figure—the effective leaf survival. This figure was obtained by counting each infected leaf as half the value of a healthy leaf, and the new total expressed as a percentage of the possible number of leaves.

The results obtained are shown in Table I.

	Balehonnur			Coorg		
	2-2-40	1½-1½-40	1-1-40	2-2-40	1½-1½-40	1-1-40
Leaf Survival per cent ...	69·5	60·8	64·1	69·9	67·6	68·2
Infection per cent ...	19·8	23·6	24·3	14·6	12·3	17·9
Effective Leaf Survival ...	62·6	53·7	56·4	64·7	63·5	62·9

Statistical analysis has been confined to the figure for effective leaf survival, and the difference between the 2-2-40 strength and the two weaker strengths is significant in the case of the experiment at Balehonnur, but not so in that at Coorg.

In both experiments, the severity of disease up to the time of observation was slight, so that the results cannot yet be regarded as affording a safe basis for recommendations.

The indications are that the lower strengths result in a loss of efficiency in disease control and these are likely to be reflected in a lower yield, as was found in the experiments on nozzle sizes and spray volumes reported in the Annual Reports of 1938-9 and 1939-40. A fresh series of observations will be carried out later in the season, if possible in both experiments, and yields will be recorded.

I have been unable to make any personal observations on various areas where lower strengths were used on a more extensive scale. Reports suggest that results were unfavourable with 1-1-40 mixtures on areas where fairly severe attacks might have been expected—i.e. areas which carried a big head of leaf through the dry weather and are carrying a satisfactory crop.

At present, the evidence suggests that it is advisable to maintain the spray strength at 2-2-40 as far as possible, but that a weaker spray is likely to be more profitable than none at all. By suitable selection of areas, it should be possible to make substantial economies, since in areas where disease attacks are likely to be light, the weaker spray may give adequate protection, as appears to be the case in the Coorg experiments.

Grateful acknowledgments are made to the staff of the Experiment Station and to Mr. C. L. J. Humphreys of Santagherry Estate for their co-operation in the conduct of these experiments.

W. WILSON MAYNE,
U.P.A.S.I. Coffee Scientific Officer.

PLANTERS ON MILITARY SERVICE

The following is a further list of planters and employees of Companies connected with planting who are engaged in Military Service:—

Name	*Address*
Coorg—	
Brameld, G. M. ...	Cotacadoo Estate, Suntikoppa P.O.
Davies, W. A. ...	Suntikoppa Estate, Suntikoppa P.O.
Jessop, C. R. ...	Nullore Estate, Suntikoppa P.O.
Maurice, J. O. F.	Koorghully Estate, Suntikoppa P.O.
Nilgiris—	
Pryde, R. S. A. ...	Terramia Estate, Kullakamby P.O.
Shevaroys—	
Dickins, D. S. ...	Tipperary Estate, Yercaud (Salem). (Now prisoner of war in Germany.)
Hearsey, D. N. ...	Glen Rock Estate, Yercaud (Salem).
Morris, W. R. ...	Waverley Estate, Nagalur P.O. (Salem).
Osbourne, J. E. ...	C/o Short Bros. Ltd., Nagalur P.O. (Salem).
Short, J. L. ...	Scotforth Estate, Nagalur P.O. (Salem).
Employees of Companies	*interested in planting—*
Campbell, J. W. ...	C/o Peirce, Leslie & Co., Ltd., Calicut.
Haig, J. C. ...	Do.
Kilgour, W. W. ...	Do.
Kirkbride, J. K. ...	Do.
Butterfield, M. C.	C/o Walker & Greig, Ltd., Coonoor.
Stevenson, R. M.	Do.

STAMP DUTY ON INSURANCE POLICIES

The Mysore Government have issued a notification that policies issued to the residents in Mysore State by foreign insurers, operating in Mysore under the Mysore Insurance Act of 1939, are chargeable with Mysore stamp duty.

Government informs the insured in Mysore that, under the Act, if they produce unstamped policies before courts or public officers in Mysore, such policies are liable to be impounded and to be subjected to the imposition of penalty under the Mysore Stamp Act.

U. P. A. S. I. CIRCULAR

NOTICE TO ALL MEMBERS

At their last meeting, the Executive Committee had under consideration all possible measures that might be taken to reduce the use of paper and stationery as far as possible as a war measure. With this aim in view the Committee have resolved to discontinue the cyclostyling and circulation to all members of the Product Sections copies of the draft proceedings of all Committee meetings, and to publish a condensed summary of them in the *Planters' Chronicle*, a procedure that has never, hitherto, been adopted.

As copies of the *Chronicle* are regularly sent free of charge to all members of the Product Sections, it is clear that the procedure fully complies with the provisions of the U.P.A.S.I. Article of Association No. 8.

It has also been decided that, as far as is possible and whenever the subject dealt with is not strictly confidential, the *Planters' Chronicle* shall be used as the medium for the dissemination of information to all members of the Association instead of by the use of circulars.

All members, therefore, are particularly requested to look out for the heading at the top of this notice in future issues of the *Chronicle*, namely 'U.P.A.S.I. CIRCULAR', as it is under this caption all proceedings, circulars, and notices to members of the Association will be published.

COONOOR,
18*th October*, 1940.

C. H. BROCK,
Secretary, U.P.A.S.I.

AVERAGE PRICES OF COMMON TEAS SEPTEMBER 1940

	Wholesale (Selling prices of dealer to retailer)			*Retail (Selling prices of retailer to consumer)*		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly	0	7	8	0	8	5
Srirangam	0	7	4	0	8	2
Kumbakonam	0	8	5	0	9	5
Mayavaram	0	8	6	0	9	0
Tanjore	0	8	6	0	9	3
Tiruvarur	0	8	6	0	9	2
Pudukottah	0	8	0	0	8	6
Karur	0	8	4	0	9	7
Erode	0	8	1	0	8	7
Tiruchengodu	0	8	3	0	8	9
Namakkal	0	8	1	0	8	7
Salem	0	8	1	0	8	9
Dharmapuri	0	7	11	0	8	5
Bangalore	0	8	1	0	8	8

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 14th October were:—

Rubber, including export licenses	55.50 cents a lb.
Rubber Export Quota	6.75 cents a lb.
1st quality rubber alone	49.00 cents a lb.

U. P. A. S. I. WAR FUND

Summary of Receipts up to 20th October 1940

		Rs.	A.	P.	Rs.	A.	P.
Firm Members—							
Previously acknowledged	...	2,250	0	0	2,250	0	0
Anamallais—							
Previously acknowledged	...	1,135	0	0			
Monthly subscriptions	...	140	0	0			
					1,275	0	0
Central Travancore—							
Previously acknowledged	...	20	0	0			
W. A. J. Milner (donation)	...	50	0	0			
					70	0	0
Coorg—							
Previously acknowledged	...	1,198	0	0			
Monthly subscriptions	...	152	0	0			
					1,350	0	0
Kanan Devans—							
Previously acknowledged	...	1,003	7	4			
Monthly subscriptions	...	406	9	4			
					1,410	0	8
Malabar—							
Previously acknowledged	...	1,042	14	0			
Monthly subscriptions	...	165	0	0			
					1,207	14	0
Mundakayam—							
Previously acknowledged	...	245	0	0			
Monthly subscriptions	...	90	0	0			
					335	0	0
Mysore—							
Previously acknowledged	...	1,392	8	0			
Monthly subscriptions	...	231	0	0			
					1,623	8	0
Nelliampathies—							
Previously acknowledged	...	130	0	0			
Monthly subscriptions	...	46	0	0			
					176	0	0
Nilgiris—							
Previously acknowledged	...	1,164	8	0			
Monthly subscriptions	...	293	0	0			
New monthly subscription	...	10	0	0			
					1,467	8	0
Nilgiri-Wynaad—							
Previously acknowledged	...	465	0	0			
Monthly subscriptions	...	80	0	0			
					545	0	0
Shevaroys—							
Previously acknowledged	...	350	0	0			
					350	0	0
South Travancore—							
Previously acknowledged	...	1,910	0	0			
Monthly subscriptions	...	150	0	0			
					2,060	0	0
Wynaad—							
Previously acknowledged	...	490	0	0			
Monthly subscriptions	...	110	0	0			
					600	0	0
			Total	...	14,719	14	8

U. P. A. S. I. LABOUR DEPARTMENT

Proceedings of the Third Annual General Meeting of the Subscribers to the Labour Department of the U.P.A.S.I. held at 'Glenview', Coonoor, on Wednesday, 7th August 1940, commencing at 2-30 p.m.

Present.—Mr. M. R. Coghlan (*Chairman*); Messrs. F. J. B. Diaper, C. L. J. Humphreys and H. C. Boyd (*Control Committee Members*); Mr. A. H. Mackie (*Director*).

Representatives of 32 Subscribers were present and in addition six visitors.

Mr. Coghlan, Chairman of the Control Committee, presided.

Proceedings of last meeting.—The proceedings of the Extraordinary General Meeting held on 18th March 1940 and the proceedings of the General Meeting held on 6th April 1940 were signed by the Chairman after obtaining the consent of the meeting.

CHAIRMAN'S ADDRESS.—Gentlemen, when I had the privilege of addressing you at our General Meeting in April last I referred to the calling up for military service of Mr. C. E. Ricketts, our old Superintendent of the Palamcottah Division whom we are pleased to see present at our meeting today. Since then Mr. Ricketts has tendered his resignation which has been reluctantly accepted by your Control Committee. In the final settlement of his association with this Department Mr. Ricketts received an ex-gratia payment of Rs. 2,500 and in accordance with the terms and conditions of his agreement six months' furlough salary and the equivalent of a single Bibby Passage for himself and his wife.

Mr. Ricketts has been an employee of this Department for some 12½ years and throughout this period his work has been of an inestimable value to the Department and his relations with the Control Committee and all Subscribers have been most cordial. It is therefore, with very deep and sincere regret that the time has come for us to bid him farewell and I am confident that I shall be expressing the feelings of all Subscribers in wishing him all good fortune wherever the future may lead him. (*Applause.*)

The provisional measures adopted by us for the running of the Department after releasing Mr. Ricketts, i.e. by the appointment of the Head Clerks of Palamcottah and Coimbatore to Acting Superintendents under the direction of our Director, and by a revision of the Director's touring programme, has so far worked smoothly and satisfactorily. The position however is still being carefully watched and such modifications in the general system as from time to time appear desirable are being promptly dealt with. In order to substantiate this statement let me say that since the commencement of the current year in addition to the items of retrenchment referred to in the report it has been found possible to give effect to the following economies which have been made possible in the main by a general reduction in the work of the Department, a point which I feel sure you will not have failed to observe in the Report itself under the headings of Labour on page 2 and of Recruiting on page 3.

The Nagercoil Office and Circle.—From the 1st July 1940 the office as such at Nagercoil has been abolished. Hitherto Estates using this area have corresponded direct with the Chief Agent and he with them. This necessitated two clerks in his office and half the time of an adjacent Agent at Kotar. The services of these two clerks have been dispensed with and all correspondence will in future be dealt with directly by the Palamcottah Office, thus bringing it all within one office control.

The Chief Agent at Nagercoil will carry on as Agent and in addition, his own Agency has been amalgamated with that of Kotar.

In the Palamcottah Division the Puliangudi and Vasudevanallur Agencies have been amalgamated, and the same applies to North and South Sankarankoil Agencies, thus reducing the Agency Staff by two.

The sum total of these adjustments and rearrangements represents a saving in expenditure to the Department in a full year of Rs. 3,912.

I have dealt with these points in some detail in order that it may be realised that everything is being done to keep expenditure at a minimum coincident with efficiency.

I have to make one other reference to my April address. You will recollect my remarks concerning the necessity of limiting debt recovery through the Department, and my intimation that it was the intention of the Control Committee to introduce this measure as from April next through the medium of a resolution we anticipated placing on the agenda of this meeting. Further consideration, however, revealed that our object might be more easily achieved by introducing this measure into the revised bye-laws.

It gives me much pleasure to be able to state that the results of the second year's working of the reorganised Department, ending March 31st last, has been eminently satisfactory. The total revenue for the year shows an increase, the total expenditure shows a decrease, and the excess of revenue over expenditure for the year amounted to Rs. 8,582-10-2 which you will see has been transferred to General Reserve. The General Reserve now stands at Rs. 28,042-8-10 and is therefore well able to meet the estimated deficit of Rs. 10,363-3-4 for the current year consequent upon the reduction in subscription rate. On this basis it is anticipated that our General Reserve at the end of the current three-year guarantee period will be in the region of Rs. 18,000 as against Rs. 10,537-9-7 at the commencement of that period, in 1938.

As you are aware, a questionnaire was circulated to Subscribers in December last, the object of which was to ascertain what support will be forthcoming throughout the next *guarantee period*. In the case of Tea and Rubber the results have been both encouraging and satisfactory but in the case of Coffee, I regret to say, disappointing.

The final acceptances todate together with the provisional acceptances, against the corresponding subscribing acreage at the commencement of the current *guarantee period* are as follows:—

Tea ...	1,09,353 acres against	1,07,994 acres.
Coffee ...	16,053 acres against	21,126 acres.
Rubber & M.P. ...	34,453 acres against	32,571 acres.

The falling off in Coffee support by approximately 5,000 acres is regrettable, and I trust that further consideration will very effectively reduce this margin before such a date as April 1st next!

Although the questionnaire called for the maximum rates of subscriptions for Tea and Coffee of 12 annas and 8 annas per acre, your Control Committee hope it will not be found necessary to enforce such rates provided the Department continues to receive the support which it at present enjoys. They are of course assuming that it will be possible to carry on without being compelled to increase the present staff.

I would like to pay tribute to the work of our Director and his Indian Staff for his and their efficient services rendered throughout the year under review. In spite of the loss sustained by Mr. Ricketts' departure, to which I have already referred, the machinery of the Department has continued to function smoothly and effectively and none can realise better than I that this is due in no uncertain measure to the work of our Director, Mr. Mackie. (*Applause.*)

In conclusion I would take this opportunity of thanking the members of the Control Committee for their extremely able assistance throughout the past year, and with theirs I would couple the name of Mr. E. E. Ranicar who served on the Committee for the greater part of last year.

We have again throughout the year been most fortunate in receiving from all Subscribers the fullest measure of support and co-operation for which we are duly grateful, and on this note, gentlemen, I place my resignation and that of the other members of the Control Committee in your hands. (*Applause.*)

Report of the Control Committee and Accounts 1939-40.—The Director read the Auditors' Report.

The Chairman pointed out that at the last Annual General Meeting some disappointment had been expressed at the apparent increase in advances over the previous year. This, he said was due to the increase in the subscribing area that year. This year the advance and way expenses paid to maistries and labourers showed a decrease of Rs. 49,574 or 35%.

Mr. Naylor queried the Rs. 10,000 deficit budgeted for and the Chairman explained that for two years there had been an excess of Revenue over Expenditure which had increased the General Reserve to Rs. 28,000. The Control Committee had decided therefore to give back some of this surplus to Subscribers in the form of a reduced subscription this year, hence the Rs. 10,000 deficit.

The Chairman then moved:—

'That the Report of the Control Committee and the Revenue and Expenditure Account for the year ending March 31st 1940, be adopted.'

The resolution was carried unanimously.

Election of Auditors.—Messrs. Fraser & Ross were re-elected Auditors for the current year on the remuneration agreed upon.

Election of Control Committee.—Mr. Wilkie in a brief congratulatory speech proposed that the present Control Committee carry on for the ensuing year. Mr. Francis seconded the proposal which was carried unanimously.

The Chairman on behalf of the Control Committee thanked the Subscribers.

Labour Department Labour Bye-laws.—The Chairman informed the meeting that the Control Committee had now revised the existing Bye-laws and brought them more in line with modern requirements. In the near future copies of these would be circulated to all Subscribers and ample opportunity given for discussion when the revised Bye-laws were formally brought up for adoption in March 1941.

Mr. Naylor then proposed a hearty vote of thanks to the Chairman and his Committee for the good work they had done during the year. (*Applause.*)

The Chairman on behalf of the Control Committee thanked Mr. Naylor for his remarks, and those present for their reception of the remarks. He then declared the meeting closed.

PALAMCOTTAH,
17-10-1940.

A. H. MACKIE,
Director, Labour Department, U.P.A.S.I.

DISTRICT MEETINGS

MYSORE PLANTERS' ASSOCIATION

A Quarterly General Meeting of the Mysore Planters' Association (Incorporated) was held on 27th September 1940.

Accession of His Highness Maharaja Sri Jaya Chamraja Wadiyar Bahadur to the Throne of Mysore.—The following resolution was put from the Chair and carried unanimously:—

'That the members of the Mysore Planters' Association do respectfully offer His Highness Maharaja Sri Jaya Chamraja Wadiyar Bahadur their felicitations on His Highness's accession to the Throne of Mysore and their abiding loyalty. They wish His Highness a long and happy reign.'

The Southern India Planters' Benevolent Fund.—The Chairman referred to the Special Appeal for Rs. 15,000 received by all members and urged them strongly to subscribe as much as they could so that the Fund would secure the Rs. 15,000 so very generously offered by the anonymous donor. Mysore usually had to make use of the Fund and he hoped that it would respond generously and top the list of subscriptions.

He considered that the U.P.A.S.I. circular which stated that there were about 600 European planters in South India, though only 369 were members of the Fund, and that if all the 600 subscribed Rs. 20 each the bulk of the money required would be raised, had misled people seriously. It was known that no compromise would be accepted by the anonymous donor and that the whole Rs. 15,000 had to be raised to secure his Rs. 15,000. As only 369 out of 600 normally subscribed to the Fund it was obviously unlikely that all the latter would respond to this Special Appeal. The result was shown in the last issue of *The Planters' Chronicle* where it was seen that 14 planters had subscribed Rs. 100 or over and in all Rs. 1,950 and that 100 planters had subscribed between Rs. 10 and Rs. 75, in all Rs. 2,477, an average of slightly under Rs. 25 each. In addition 5 public companies all connected with one firm of Agents and Secretaries, 2 private companies and 4 privately owned estates had subscribed in all Rs. 1,250. The total subscribed was Rs. 5,677 leaving a balance of Rs. 9,323 to be raised by the end of March 1941, the donor having extended the time till then from the end of December.

He suggested that it would have been much better if the U.P.A.S.I. had asked for 150 men to subscribe Rs. 100 each which would have raised the entire sum required. Obviously there were more than this number who could subscribe Rs. 100 each if they would.

In Mysore only 17 members had so far subscribed in all Rs. 1,625 and this left approximately 34 members who had not yet subscribed.

The Secretary said that the donor of the Rs. 15,000 offered wished to remain anonymous but his identity had leaked out and was now being spoken of. His very fine offer should entitle him to have his wish for anonymity respected and the Secretary appealed to those members who might now have been told the donor's name not to pass it on.

He said now that the period had been extended till the end of March members could usefully make monthly subscriptions and appealed to Mysore to give a lead in contributions.

A list was then circulated amongst those present and resulted in a further Rs. 1,210 being promised, 5 of these 24 subscriptions being second ones. This brought the Mysore total to 36 subscribers and a total of Rs. 2,835.

Coffee marketing in war time.—The Secretary reported as follows:—

At its General Meeting on August 30th this Association unanimously supported the Voluntary Pool Scheme as it considered that there was not time for the introduction of a compulsory control one for the 1940-41 crop but it agreed that Mr. Ivor Bull's scheme should be used as the basis for working out control arrangements for the 1941-42 and subsequent crops. On September 4th a telegram was received from the Commerce Department of the Government of India inviting this Association to send a representative to Madras for a Conference on 18th to be presided over by the Commerce Member of the Government of India (Sir A. Ramaswami Mudaliar) to discuss the war time control of production and marketing of Indian coffee. Your Executive Committee, with little option for lack of time owing to my joining a deputation to the Dewan of Mysore on 6th, sent me to represent you. The Conference turned out to be due to action taken by Mr. James and to a fortunate visit of the Commerce Member to Madras, and the scheme to be discussed that of Mr. Ivor Bull. The

Conference consisted of representatives of the Governments and bodies represented on the Indian Coffee Cess Committee and representatives of Curers, Distributors and Shippers were added owing to Mr. James's forethought. The Governments treated the Conference as one of importance as will be seen from their representatives:—

Madras.—Mr. H. M. Hood, Adviser to the Governor and in charge of Development.

Mysore.—Rajamantrapravina N. Madhava Rau, First Member of Council and Chairman of the Indian Coffee Cess Committee.

Coorg.—Mr. J. W. Pritchard, Chief Commissioner of Coorg.

Travancore.—Mr. M. Ramachandra Rao, Revenue Commissioner.

The Director of Industries and the Secretary, Development Department, Madras, were also present.

The non-officials held a preliminary meeting on the afternoon of 17th and worked out, as far as might be in the time available, a compulsory scheme of control. This was put before the first meeting of the Conference on the morning of 18th and discussed then and at its second meeting that afternoon. As there had not been time for full consideration of the details, the Commerce Member very kindly arranged that the Conference should go into Committee on the morning of 19th under Mr. Hood and meet him (the Commerce Member) again on the afternoon of 19th. These additional meetings were of the greatest value and resulted in the report, unanimous on all points except one, that has been sent to you.

As regards the Control Scheme, this may have struck some of you as harmful to your own interests. In a few cases perhaps this is so. I have come across one case of a prosperous planter who apparently believes in the survival of the fittest school of thought. But I agree and trust that you will agree with another coffee planter who, though quite independent of coffee, holds that it is wrong to consider letting the poorer planters face without assistance the ruin that seems to be coming on them. I cannot do better than read to you Kenya's explanation of why their Government has taken complete control of their coffee industry. Their case is exactly parallel to ours, and our scheme very similar to theirs. The explanation is as follows:—

'In exercising control of the marketing of the Kenya coffee crop, the primary consideration of the Committee is to obtain a price for the crop which will maintain production. It is obvious that unless coffee is produced the commercial interests which at present draw their livelihood from the industry must cease to exist.

'Subject to this primary consideration the Committee wishes to preserve equity within the industry and to enable the various firms engaged in the handling of coffee to continue in operation and to preserve their status *vis-a-vis* their competitors.

'The Committee, therefore, proposes so to organise the marketing of the crop as to make use of existing trading interests. Departure from this principle will only be contemplated where and to the extent that exigencies of the future render such course unavoidable.

'It is proposed that the crop shall be sold on a pool basis, and that no individual planter shall benefit from the restricted sales which may be made to the markets which still pay premium prices for quality coffee. Payments to planters from the pool, will, however, be made upon a scale laid down by the Committee which will differentiate in value between the various qualities of coffees. Thus, although the producer of quality coffee may contribute more to the pool than the producer of poor coffee, he will also draw more from the pool.'

Another similar view was expressed by Mr. Ortega at the Third Pan-American Coffee Conference:—

'With lightning rapidity', Mr. Ortega told the delegates, 'the war in Europe is robbing us of one consuming market after another. The quick succession of these developments has relegated to a second place the numerous problems that confronted our industry. With the continuous elimination of most of our European markets, the lack of balance between production and consumption emerges as the great problem—the problem that we must solve if we wish to avoid still more ruinous days for the thousands and thousands of our fellow citizens who toil in the plantations of Latin-America and who, at the present level of prices, are exporting their sweat and blood.

'At this Conference', he added, 'sacrifices will be asked, sacrifices which might appear hard for many of your countries, considering that from time immemorial they have been accepting a free system of production and export as a normal routine in their economic structure. But, gentlemen, these are not normal times and hardly can an example be found in the history of our industry in which collective effort and sacrifices have been so vital, so desperately necessary as they are today.'

The Control Scheme the Madras Conference asked for will restrict our liberties to export and otherwise dispose of our crops, and it will mean some inconvenience to planters. But we have been rather conspicuous in the past for failing to act co-operatively, and present world circumstances appear to make it really necessary that we should be now made to do so. Any voluntary scheme is unreliable and unfair. It is, perhaps, a pity that the survival of the fittest idea was not allowed to operate more freely in peace time, but I suggest to you that now we should be doing a disservice to our country if we did not act co-operatively, so that as many people as possible may continue to make a living out of coffee in India rather than that a few should make more than a living and others be thrown out of employment.

I think we should record appreciation of the great work done by Mr. Ivor Bull, who is the originator of all that has been done and whose scheme is still the basis of the Conference's report, and by Mr. F. E. James, who arranged the Conference and led its non-official element and without whom we should have been at a very great disadvantage. We owe these two our sincere thanks as we do to Sir A. Ramaswami Mudaliar and Mr. H. M. Hood both of whom gave us all the time that was necessary, listened to us with great patience and took great care to make sure that they understood the details of a business that was to a great extent new to them.

You will have noticed that Mr. Madhava Rau's signature does not appear on the report. This was because he had to leave Madras after the second meeting of the Conference on 18th. I may say, however, that there is reason to think that the report has the approval of the Mysore Government.

I would ask all of you to give this attempt to preserve the coffee industry of India your unanimous support both now and when it is in operation.

The Madras Conference Report was then discussed in detail 'In Committee'.

The following resolution, proposed by Mr. Homewood and seconded by Mr. Frend was passed *nem con*:—'That as opportunity offers every avenue should be explored with a view to bring within the scope of the proposed Control Scheme every grower and his crop, irrespective of size.'

With the following provisos:—

(i) That the legislation should remain in force only for the duration of the war,

(ii) That paragraph 4 under 'Curing' needed clarification,

(iii) That the Indian Coffee Cess Committee should be enlarged when it became the Coffee Marketing Control Board, and

(iv) That the decision of the Board should be final except for review by the Central Government,

the meeting adopted the report of the Conference by 17 votes to nil, two members remaining neutral.

At the suggestion of Mr. Homewood it was decided to call an Extraordinary General Meeting as soon as might be, so that planters would have another opportunity of discussing any ideas and suggestions that might occur to them subsequent to the present discussion and before finally committing themselves to the proposals.

Mr. Young proposed a hearty vote of thanks to Mr. Kirwan and the Secretary for all the work they had done and for the way in which they had explained the report to the meeting. This was passed unanimously.

Any other matters of importance.—The Friend-in-need Society.—The Secretary informed the meeting that the Friend-in-need Society had a Women's Workshop in Col. Hill Road, Bangalore, where the Society would be glad to undertake mending and needle work. This should be useful to bachelors and he was sure that the standard of work would be high and the charges low.

Roads.—A long and general discussion took place and only one instance of a recently improved road (Aldur-Jayapura) was mentioned. The general view was that the roads which members used had rapidly deteriorated and had already gone back to the state they were in, say, 5 years ago. There was no improvement in the methods of upkeep, what work was done was still often done at the wrong time, was not thorough and consequently did not last. Corrugated surfaces were now common. The system of insufficient annual grants for State Fund Roads made up from time to time by special grants was unsatisfactory and there appeared to be no standard for such roads, each Division seeming to do as little as it liked. Constructive suggestions were ignored and traffic was still forced to go over such raw metal as was put down. That metal was far too often quartz which went to dust far too quickly. Some roads were so overgrown with Lantana as to be dangerous.

The Secretary was instructed to write to the Secretary to Government, Public Works and Railway Departments, and send him a copy of the Association's letter to the Chief Engineer of a year ago and ask once again that a new policy of continuous improvement of the roads should be adopted.

MARKET REPORT AND PRICES

Calcutta (*Issued by the Calcutta Tea Brokers' Association*).

Sale No. 17 was held on the 14th and 15th October, 1940.

DESCRIPTION	Season 1940-41		Average on same date	
	Sale No. 17	Average to date	In 1939	In 1940
	As. p.	As. p.	As. p.	As. p.
With Export Rights	14 11	12 3	11 3	9 2
For Internal Consumption:—				
Leaf Teas	4 0	3 10	5 1	4 0
Dusts	5 0	4 9	4 9	4 4
Green Teas	6 2	6 6	5 5	5 9

RUBBER—London Rubber on October 21, 1940, 11¾*d*.

Colombo (*Issued by the Colombo Brokers' Association*).

Average prices obtained (in cents.)

SOUTH INDIAN TEA SALES

Oct. 8 & 15, 1940

There was only one invoice on sale which was incomplete.

RUBBER SALES	Oct. 10. 1940
Ribbed Smoked Sheet ...	56½
Contract Crepe ...	55½
Mottled Brown Latex Crepe	51 to 53
Brown Scrap Crepe ...	47 to 47½

Madras (*As on 24th October* 1940. *Issued by Messrs. Paterson & Co.*).

During the past fortnight Indian stock markets have experienced very steady conditions. The Gilt Edged security section in particular has been notably firm in sympathy with London. Money continues almost unlendable, Call being quoted at ¼% to ½%. Intermarket leaders particularly steel issues show little alteration on the fortnight's trading. Bombay, however, has shown some activity in textile shares and this has been reflected in a stronger undertone for local mill shares in which a fairly substantial turnover has been possible.

RUBBER

The price for Spot Rubber in India continues unchanged at around 48 cents per lb. and 6 cents per lb. for the Quota. In London the price has fluctuated around 11¾*d*. Spot. Price movements in the local share market have been very narrow. Buyers have shown some reluctance to follow up the market with the result that there are wide differences between sellers' and buyers' ideas of rates. The volume of business therefore has not been so big as might have been expected. Cochin Malabars have hardly had a transaction during the period under review. At the close there are a fair number of buyers at Rs. 6 to Rs. 6-2 with doubtful sellers below Rs. 6-4. Malankaras have been bid up to Rs. 29-4 with further buyers over. On the other hand Thirumbadis were a neglected market there being small buyers at Re. 1-7. One marking was recorded in Cochin Rubbers at Rs. 13-4 and at the close there were good buyers at Rs. 13-8 with doubtful sellers even a rupee higher. Among the A. V. Thomas group, Coorgs were stronger at Rs. 27 and Kalpettas were slightly easier with transactions at Rs. 16-12. Midlands were steady at Rs. 4-6 while small business was possible in Rajagiris at Rs. 4-7 and Rs. 4-10. Among the more speculative issues, Manalurs changed hands at Rs. 4-5, Nellithanams at Rs. 6-2 and Thambarapally at Rs. 6-10. From the Home papers it is noticed that Kerala Calicuts have declared a dividend of 1*d*. per share which is the same as last year.

TEAS

Tea shares continue to meet with very good investment support. A fair number of deals were put through in Periakaramalais between Rs. 17 and Rs. 17-4 while Peermades were bid up to Rs. 25-8. Highland Produce were also better at Rs. 24-8 ex dividend while Chembra Peaks changed hands at Rs. 3-3. Devasholas had good buyers at Rs. 6-10 with no quoted sellers below Rs. 7-8. Among fixed interest securities, Ouchterloney Valley Debentures were taken off the market at Rs. 103, Balanoor prefs. at Rs. 9-12, and Mlamallay Tea prefs. at Rs. 23.

U. P. A. S. I. LABOUR DEPARTMENT

NOTICE

Mr. A. K. Venkatachalam has been appointed Labour Department Agent at Theni from 14-9-1940 vice the late Rao Sahib A. S. Alaganan Chetty.

A. H. MACKIE,
Director, Labour Department.

CENTRAL TRAVANCORE PLANTERS' ASSOCIATION

We have been asked to draw attention to the change in the Honorary Secretaryship of the Central Travancore Planters' Association. After 20th October 1940 all correspondence should be addressed to:—The Honorary Secretary, Central Travancore Planters' Association, Carady Goody Estate, Vandiperiyar P.O. (and Anchel), S. India.

LT.-COL. W. B. POWELL

Lt.-Col. William Bowen Powell, C.M.G., D.S.O., late of the 7th Gurkha Rifles, died at Shawford, Hants—aged 72.

Lt.-Col. Powell was for some years part proprietor of Forest Hill Estate, Kotagiri, Nilgiris.

FORTNIGHTLY RAINFALL STATEMENT

September 29, 1940 to October 12, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	0·80	4·91	94·67	100·38	25. Kotagiri ...	1·24	1·38	34·47	37·09
3. Kallar B'dge	1 14	7·94	115·75	124·83	26. Ootacamund ..	1·04	1·04	33·58	35·66
4. Koney ...	3·56	4·84	95·63	104·03	27. Yercaud ...	0·05	4·10	41·26	45·41
8. Twyford ...	1·84	7·81	217·29	226·94	30. Devarshola T.E.S. ...	1·34	0·50	63·86	65·70
9. Pettimudi ...	1·48	6·56	288·84	296·88	31. CALICUT ...	0·05	...	107·98	108·03
10. Kalaar ...	2·13	5·86	229·66	237·65	32. Kuttiyadi ...	0·16	3·96	115·68	119·80
11. Chittavurrai...	1·04	1·76	42·31	45·11	33. Vayitri ...	0·63	5·46	150·23	156·32
12. BODI'KANUR...	2·80	0·40	12·41	15·61	34. Manantoddi...	0·07	1·68	103·32	105·07
13. COCHIN ...	0·89	7·28	102·07	110·24	35. Bilgiris ...	...	3·74	56·39	60·13
14. Mooply ...	0·62	3·14	113·99	117·75	38. Pollibetta ...	...	1·71	60·32	62·03
15. Pachaimallai	1·79	2·89	121·97	126·65	39. Coovercolly ...	N.R.	N.R.	69·78	...
16. Mudis ...	1·86	6·53	181·21	189·60	41. Kadamane ...	...	5·26	238·56	243·82
17. POLLACHI ...	0·09	5·20	25·17	30·46	43. Merthisub'gey	...	2·56	118·46	121·02
18. Ropeway Waterfall ...	0 21	2·98	66·82	70·01	45. Balehonnur ...	0·75	1·45	108·63	110·83
21. Kerala Estate	1·16	2·89	143·55	147·60	46. MANGALORE ...	...	2·79	128·67	131·46
22. Naduvattam	2·30	1·72	96·84	100·86	47. MADRAS ...	0·20	5·12	14·24	19·56
24. Coonoor ...	0·54	0·70	28·34	29·58					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor, 'Glenview', Coonoor, Nilgiris

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EDITORIAL

Except for an item in the press which mentions that the proposed Coffee Control Bill is likely to be placed before the Legislative Assembly at its session which has just commenced, we have had no further information regarding the proposed bill. At the same time we take this opportunity of reminding all our coffee readers that, though the bill is to make suitable provision to ensure that existing contracts for the sale of coffee are not affected, it is advisable that all contracts for forward sales now being made should have a clause in them indemnifying the seller from any failure on his part to complete the contract owing to any action that may be taken by the proposed Board which will be set up as soon as the Bill becomes law.

Elsewhere in this issue we publish an interesting article explaining how the proposed Coffee Control is to be worked, and we would draw the attention of our Coffee readers to it as it is the first authoritative summary of the Scheme to appear in print.

* * * * * *

The very high price demanded for the purchase of export quota rights has been causing a good deal of uneasiness not only in India but also in Ceylon. It is interesting to learn that, under the emergency powers of the Governor in Ceylon, regulations have been gazetted to provide for the control of transactions in tea coupons. These regulations are extremely drastic but they are only to be brought into force after proclamation, and it will be interesting to see the reaction in the coupon market to the implied threat. Under the regulations the Tea Controller will be authorised to fix, from time to time, the maximum prices at which the tea coupons may be bought and sold, to proscribe the validity of tea coupons, and to restrict transactions in such a way as to eliminate any person who has no direct interest in the tea industry.

Care has to be taken that nothing should be permitted to interfere with the export of tea to the Ministry of Food in the United Kingdom or with exports for the use of His Majesty's Service.

There has been a feeling lately that some such similar action should be taken by the Government of India, though it is possible that the present situation may be eased by the recent announcement that the International Tea Committee have decided to release a further 2½% on the Standard Export. This should remove a part of the difficulties that have arisen as regards the sale of export quotas previous to the 5% cut in the quota made some months ago, though these difficulties cannot entirely be removed unless the full cut is restored.

* * * * * *

The *Times of Ceylon* recently published an account of a tour in South India by Mr. M. R. A. Masilamoney, a Madrasi, who has spent many years working on Estates in Ceylon. His talks with labourers who used to go to Ceylon for work showed their regret in two directions, first that they could not return there to work owing to the present immigration ban, and secondly that their fellow-labourers in Ceylon were giving unnecessary trouble to their 'Dorais' through listening to the useless speeches of the newly-formed sangams and associations there. Mr. Masilamoney remarks—'From my talks with them, I was strengthened in my belief that both employers and employees would benefit if the labour sangams and associations in Ceylon were wiped out. The Indian labourer, in his simplicity, is too easily led by what agitators tell him.' He goes on to comment on incorrect assertions made by Mr. Satyamurthi, among them his declaration that housing accommodation given to Indian labourers on Estates was not satisfactory. Mr. Masilamoney advises that speaker to do something about housing conditions in small Indian villages—'There they seldom have good water and certainly no latrine arrangements. Grown-up children, parents and married relatives live together in a small mud-wall hut of one room—not to mention the rats and snakes!' He concludes by saying that Indian labourers on estates have little cause for complaint in Ceylon and that European planters have dealt with them justly since 1827.

* * * * * *

The intensive propaganda campaign in the United States of America, carried out by the Tea Bureau, is now definitely bearing fruit. Consumption in the U.S.A. is steadily rising and in 1939 amounted to 96.1 million lbs. For the first time since 1923 imports of tea into the United States have topped the 100 million lb. mark, the actual figure being 102.5 for the year ending 30th June last, an increase of 14.5 million lbs. over the imports of the previous year. The chief reason for the very rapid rise in imports is the policy of accumulating stocks as a precautionary measure in these unsettled days of world war, and it does not imply that this year's consumption in America is leaping up in the same proportion, and imports are likely to show a falling off at some future date. Still, with ample tea available in that country, the work of the Tea Bureau should show even still more encouraging results.

* * * * * *

Hitherto certain Tea Concerns have been allotted, by the Ministry of Food, special London export quota enabling them to withdraw specific quantities of Tea, which had already been delivered to the Ministry of Food, for re-export to other countries under firm offer from overseas.

Information has now been received from the Tea Controller for India that this arrangement is suspended.

U. P. A. S. I. CIRCULARS

TRAVANCORE TEA EXPORT DUTY

The Tea Controller for India has notified that the following Customs Notification has been issued as No. R.O.C. No. 7018/40/Devpt., dated 7th September 1940:—

In exercise of the powers conferred by Section 9 of the Travancore Land Customs Act, II of 1091, the Government of His Highness the Maharaja are pleased to make the following amendment to Rule 8 of the Rules passed under Government Notification R.O.C. No. 5389/27-14/Devpt. dated the 16th September 1933:—

Add the following to the first paragraph after the words 'shall be adopted':—

'Provided that in the case of tea intended for export to the United Kingdom from Travancore either through Cochin or any of the parts in Travancore no duty shall be levied on any excess found over the manifested quantity if the excess does not exceed one per cent and the total duty does not exceed Rs. 5.

COONOOR, C. H. BROCK,
31st *October* 1940. *Secretary.*

5% CUT IN TEA EXPORT QUOTA

The South Indian Association in London has notified that the Ministry of Food has promised to give special consideration to any cases where producers may be able to show that, as a result of the 5% cut in the export quota, genuine hardship would result from carrying out in fulfilling their obligations to Government under the 1940 Contract.

It has further been notified that it will be necessary for contractors, wishing to avail themselves of the arrangement thus made, to submit their case direct to the Ministry of Food in the case of Sterling Companies, or in the case of Rupee Concerns direct to the Tea Controller in Calcutta.

COONOOR, C. H. BROCK,
30*th October* 1940. *Secretary.*

CULTIVATION OF MEDICINAL PLANTS

The Director-General, Indian Medical Service, recently approached the Imperial Council of Agricultural Research regarding the possibility of procuring in India certain drugs normally obtained from outside India in peace time by the Medical Stores Department. These are required, first of all if possible, as a war emergency measure, but since many of them require time for the procuring of seed and growing of the crop, it is advisable to consider them as possible permanent crops.

The actual requirements of the Indian Medical Service could be supplied by comparatively small areas of the various plants, but at the same time it is possible that, if any of them can be successfully grown in South India, there might be a wider market for them both during and after the war.

The names of nine drugs have been supplied. In reply to enquiries made, particulars of experiments with six of these have been procured from the Curator, Government Botanic Gardens & Parks, Ootacamund, through the Director of Agriculture, Madras. The following particulars received from the Director are published for the information of members of the U.P.A.S.I., who are recommended to communicate direct with the Curator, Government Botanic Gardens & Parks, Ootacamund, for advice as to obtaining seed, or possibly, plants, for experimental purposes:—

1. *Erythroxylon Coca.*—This thrives well at the Kallar Gardens which is situated at an elevation of 1,300 ft.-1,400 ft. and there are at present about 300 seedlings recently raised from the seeds collected from the only one old tree growing in the above gardens. Seeds and seedlings are available for distribution. Good matured leaves suitable for extracting the pure cocaine alkaloid will not be available in the near future. It has been grown at an elevation of over 4,000 feet.

2. *Caphaelis Ipecacuanha.*—This has been grown for many years in the Kallar Gardens, but without commerical success. The present area under cultivation at the Kallar Gardens is only one cent and the plants are growing satisfactorily. The plants are flowering freely and seeds have been produced. In 1936-37, 1 lb. of root samples was sent to the Medical Stores and the Indian Medical School, Madras, for analysis. The reports of analysis show that the samples were not satisfactory, as the proportion of Cephaelin to total alkaloids was high. Mature roots of the old plants will again be sent for analysis as soon as ready.

3. *Barosma Betulina, Bachu.*—One oz. of seeds received from the Union of South Africa was sown in February 1936 and only four seeds germinated. The seedlings grew well for some time and subsequently died. Another packet of seeds was obtained from the same source and 72 seedlings were successfully raised, of which 24 were potted and the remaining 48 kept in pans. In spite of special care bestowed on them, the plants began to damp off and there are at present only three plants, but their growth is very slow and do not appear to be very healthy.

4. *Ipomoea Purga* (*Jalap*).—This is being grown successfully for many years in the Botanic Gardens, Ootacamund. The area under Jalap is only 5 cents at present. This year's crop, viz., 230 lbs. of tubers were planted in March 1940 and the growth is satisfactory so far. From the results obtained up to date, there is no doubt that the Jalap could be grown profitably on the Nilgiris, but for want of sufficient planting materials the present area under cultivation could not be extended.

5. *Lobelia Inflata.*—A packet of seeds was obtained from the United States Department of Agriculture, Washington D.C., and sown in 1936. 96 seedlings were raised and planted in a portion of the medicinal garden, but the subsequent growth of the plants was not satisfactory and all the plants gradually died. A packet of seeds was again obtained from the above department. Only 12 seedlings were raised and these were potted and kept inside the glass house. The growth was very satisfactory in the beginning, but after some time, nine plants died and there are only three plants surviving at present, which are also not quite healthy.

6. *Mentha Piperita.*—I find from the previous administration reports that this was under cultivation in the Botanic Gardens, Ootacamund, since 1917-18, and a small quantity of Peppermint oil was also distilled and sent to the Medical Store-keeper in 1918-19, who has stated that the oil answered the B.P. requirements. After 1919-20, the cultivation of the above has been discontinued for want of suitable spots in the gardens where it could be grown and as there was not much demand for the oil then. This grows well here as a garden plant and could be cultivated easily.

The other three drugs mentioned by the Director-General, Indian Medical Stores, are:—

Rhamnus Purshiana, Physostigma Venenosum, Smilex Ornata. No information is available as to whether any of these have been experimented with in South India nor, at the moment, has it yet been possible to ascertain where they are grown or from where seed can be obtained.

COONOOR, C. H. BROCK,
30th October 1940. *Secretary.*

S. I. P. BENEVOLENT FUND SPECIAL APPEAL

We regret that when making acknowledgments in our last issue the total paid and promised todate was omitted. It amounted to Rs. 10,148-6-8. At the time of writing progress has not been so good in spite of one splendid donation from a Nilgiri Company, but we hope the list below will improve before we go to press five days hence. We have been dividing the donations into planting districts, and in our next issue we hope to give details, but in the meantime we must pay tribute to the Mysore planters who have responded so nobly to the call. Individual planters there have put up Rs. 2,245 as compared with Rs. 4,076 from individual planters in all the other districts put together.

There is one aspect to which we would like to draw particular attention. 115 members of the Fund have already left for military service. This means that the ordinary income of the Fund will lose Rs. 1,150 in subscriptions. It is very likely that we shall lose still more of our permanent subscribers answering the country's call, so we may expect a further considerable drop in subscriptions. Even if, as we certainly will, obtain the full amount appealed for by the President, the interest on the sum invested will not make up for the Fund's prospective loss in income. We must not stop at the amount of the appeal, but continue to get all we possibly can before the end of this financial year, the time limit fixed for the close of the appeal. Individual subscriptions have been splendid, but we would like to see more response from estates, planting companies and District Associations. Some Associations subscribe regularly to the Fund, but none have yet responded to this Special Appeal. Most of them have reserve balances. Cannot they dip into them, just this once, for this great cause?

	Rs.	A.	P.
Amount previously acknowledged on 26-10-40 ...	10,142	6	8
J. H. Wilkes	30	0	0
Jumboor Estate	50	0	0
S. S. B. Ball	25	0	0
Aspinwall & Co., Ltd.	100	0	0
Stagbrook R. & T. Estates Ltd. (Maimallai Estate)	21	15	0
E. A. Cowdrey	25	0	0
'A Coffee Planter'	36	8	0
J. H. Jeffrey	100	0	0
Nonsuch Tea Estates Ltd.	1,000	0	0
W. W. Mayne	50	0	0
N. B. Cockman	15	0	0
Kotada Estates	50	0	0
Total ...	11,645	13	8

U. P. A. S. I. EXECUTIVE COMMITTEE

Extracts from the draft proceedings of a Meeting of the EXECUTIVE COMMITTEE of the United Planters' Association of Southern India (Inc.), held at 'Glenview', Coonoor, on 12th October, 1940.

Present.—Mr. J. R. N. Pryde (*President*), Messrs. J. E. Sampson, W. G. Craig, Ivor Bull and F. E. James (*Members*), and Lt.-Col. C. H. Brock (*Secretary*).

A letter from Mr. W. K. M. Langley regretting his inability to attend the meeting was recorded.

Minutes of the last meetings.—The minutes of the last meetings of the Committee, held on the 3rd and 8th August 1940, were confirmed.

The President expressed the thanks of the Committee to Mr. F. E. James for all the work he did as Acting Secretary of the Association during the interval between the departure of Mr. A. G. Acaster on military duty on August 18 and the arrival of Col. Brock from England on September 18. The President welcomed Col. Brock and said that the Committee fully appreciated his return to his old post as Secretary for the duration of the war.

Expenditure on Postages, etc.—In order to save paper and postal expenditure, the Executive Committee resolved to adopt the following measures:—

(*a*) To publish summarised proceedings of all Committee meetings in the *Planters' Chronicle* instead of having them cyclostyled and posted to all members of Product Sections and Firm and Association Members as at present.

(*b*) If any lengthy circulars were received, that these be summarised and published in the *Chronicle.*

War Funds—U.P.A.S.I. War Fund.—It was resolved that up to the 10th of October 1940, the total amount of subscriptions and donations received amounted to Rs. 14,438-14-8 out of which Rs. 10,375-10-2 had already been forwarded to the Viceroy's War Purposes Fund.

The Committee resolved that no expenditure on account of postages and printing in connection with the Fund was to be a charge against the Fund, but should be entirely borne by the Association, so that the full amount received from donors and subscribers will be credited to the Fund without any deduction whatsoever. The Secretary was instructed to write back such expenditure as had already been charged to the Fund.

The Secretary was instructed to publish in the *Planters' Chronicle* a monthly statement showing, by Districts, the amount received previously and a list of new donors and subscribers by name.

Provincial and State Funds.—The Committee read a circular dated 27th July 1940 which the Indian Tea Association, Calcutta, had addressed to all Agency Houses and Proprietary Interests, asking all tea estates to contribute a fixed rate per acre, the amounts realised to be forwarded to the Assam Fund and the Bengal Fund according to the contributions made by individual gardens in those Provinces.

The Committee have been informed that the various Provinces and States in South India were applying to plantations within their areas to give donations to their respective War Funds, and therefore recommend for the consideration of all estates in South India that acreage subscriptions should be given by tea, rubber, coffee and minor products to their respective Province and State Funds through the U.P.A.S.I. Subscriptions thus collected will be forwarded to the respective War Funds, in full as received, giving the name and amounts subscribed by every estate.

U.P.A.S.I. Year Book.—Mr. James expressed his regret for the delay in issuing the *U.P.A.S.I. Year Book* and explained the delay that had occurred owing to unexpected difficulties in printing.

Disincorporation of U.P.A.S.I.—With reference to the circular issued on the 20th of August 1940 to all members of the Association, pointing out the advantages and disadvantages of disincorporation, it was recorded that all replies received todate were in favour of disincorporation with the exception of one member.

Election of Members.—The Committee unanimously elected the Association of Planters of Travancore as an Association Member of the U.P.A.S.I.

Government Grant.—Recorded letter, dated 20th September 1940, to the Secretary to the Government of Madras, Development Department, forwarding the resolution passed at the Annual Conference and urging the Government to give favourable consideration to an increase in the grant for the next three years to the sum of Rs. 21,000, as previously.

Scientific Officers.—The Committee recorded their opinion that the Tea and Coffee Scientific Officers are engaged in work of national importance, and that, unless and until the War position demands their release, they would best serve the country's agricultural interests by remaining at their posts.

Fertiliser Prices.—Recorded letter from the Imperial Chemical Industries (India), Ltd., dated 23rd of August 1940, with regard to Sulphate of Ammonia. It was noted that exports of British Ammonia were banned at the outbreak of hostilities and no further imports into India were received until February-March 1940, when some supplies of Continental Sulphate were obtained. The export of British material was resumed for a short period, but a further ban was imposed again at the end of May and no exports had been permitted since then, and at the same time Continental source of supply had been cut off. In collaboration with other fertiliser firms, the company had been able to arrange some imports of American Sulphate, but the price at which this was obtainable limited the quantity imported. It is possible that the export of British Ammonia may be renewed late in the Autumn, but this is dependent upon the war situation.

Soil Erosion in the Nilgiris.—Recorded letter addressed to the District Forest Officer, the Nilgiris, dated 9th September 1940, offering the Association's co-operation, and his reply welcoming the offer and the notes subsequently submitted by the Scientific Officers, explaining steps that were being taken to go into the question of soil erosion by a Sub-Committee of the Nilgiri District Council, and notifying that the Sub-Committee might be very glad to avail themselves of the advice and assistance of the U.P.A.S.I. Scientific Officers, if they could afford the time in the preparation of a Memorandum on the subject.

The Secretary was instructed to reply to the District Forest Officer that the Scientific Officers of the Association would be glad to co-operate with the Sub-Committee as far as possible.

Eastern Group Conference.—Letters dated the 12th September and 1st October 1940 have been received from the Department of Commerce, Government of India, asking for the views of the Association on various points referred to in speeches made by the Honourable the Commerce Member at a meeting of the Export Advisory Council in Bombay regarding the problem of the disposal of surpluses in India both during and after the war.

The Secretary was instructed to reply that the position of coffee in this respect was acute and a scheme for marketing control is at the moment being considered by the Government of India. With regard to tea and rubber, exports of these are controlled by International Agreements, which are still in force, and, in the case of the former, the Ministry of Food in the United Kingdom has taken over control of all exports from India. As both these commodities are items of International control agreement, it does not appear possible to make any suggestions as to what may be their post-war situation.

War Risk Insurance.—The Government of India has published Ordinance No. IX of 1940, dated the 26th of August 1940, which makes provisions for the insurance of goods in British India against damage by enemy action. Under this Ordinance agricultural products are not liable to be insured until they leave the property on which they are grown. Hence plantation products are liable for insurance during the time that they are in transit up to the date of shipment, but then only if the total quantity in transit or awaiting shipment at any one time during a quarter amounts to the value of Rs. 20,000 or more.

Mr. James kindly undertook to write a short note as to how War Risk Insurance affects estate products, for publication in the *Planters' Chronicle.*

Calicut-Ootacamund Road.—In reply to a letter forwarding the resolution which was passed at the Annual General Conference, the Secretary to the Government of Madras, Local Administration Department, under date the 7th September 1940, replied that the request of the Association could not at present be complied with, but that steps were being taken to get the bad stretches of the road repaired. He added that a deputation would not serve any useful purpose.

South Indian Railway Advisory Committee.—In a letter dated 20th September 1940, the Agent, South Indian Railway, advised that Lt.-Col. C. H. Brock had been nominated as a member of the Advisory Committee of the Railway to represent the U.P.A.S.I. to fill the vacancy caused by the resignation of Mr. A. G. Acaster.

Cochin Port Trust.—The Committee considered correspondence between the Association and the Cochin Chamber of Commerce with reference to that Chamber's representations that further representation of European commercial interests be assured on the Cochin Port Trust Board by increasing the number of Commissioners on that Board.

After due consideration, and in view of this request having been definitely refused in the past, the Committee were of the opinion that it would not be advisable to press for an alteration in the composition of the Board at the present juncture.

Provident Funds and Military Service.—At the last meeting of the Committee reference was made to a letter, dated 21st June, addressed to the Central Board of Revenue, urging that the Provident Fund Relief Rules be amended so as to provide for employers and employees making contributions to an employee's provident fund while engaged on military service. This letter was acknowledged by the Board of Revenue, under date 24th July 1940, with the remark that the views of the Association had been noted by the Board. This correspondence was recorded.

Profession Tax.—Mr. James informed the Committee that the Government of Madras were not prepared to consider the proposal of fixing a maximum limit to Profession Tax in the Madras Presidency. He also informed the Committee that the question of moving a private Bill in the Legislative Assembly dealing with this matter was under consideration.

Labour Advisory Committee.—The proceedings of a meeting of the Labour Advisory Committee, held on 6th August 1940, were read and approved.

Recruitment of Labour—Facilities.—A letter from the Public (Political) Department, Government of Madras, dated 18th September 1940, was recorded. This letter enclosed a resolution passed by the Recruitment Sub-Committee of the Madras Provincial War Committee to the effect that Government be requested to address the managements of various companies, firms and other employers of labour to give their employees a lien on their present appointment during their absence on military duty.

The Committee were of opinion that this principle had already been accepted by employers.

Tea Estate Health Returns.—The Indian Tea Association, Calcutta, forwarded to all Agency Houses and Proprietary Interests of that Association, on 30th August 1940, a circular pointing out that, at the Annual General Meeting of the I.T.A. on 20th March 1940, Sir Malcolm Watson, Director of the Ross Institute of Tropical Hygiene, invited attention to the scheme for the standardisation of health returns from the tea industry, which had been prepared by Dr. B. A. Lamprell and adopted by the North Bengal and Assam Branch of the British Medical Association. The I.T.A. Committee expressed their opinion that the question of the adoption of the system of standardisation suggested is one that must be left to the individual discretion of the tea companies concerned.

The Secretary was instructed to write a note on this subject in the *Planters' Chronicle* and to state that, in the opinion of the Executive Committee, a standardised system of health returns was advisable.

COONOOR,
30th October 1940.

C. H. BROCK,
Secretary.

U. P. A. S. I. COFFEE PRODUCT SECTION

Extracts from the draft proceedings of a Meeting of the COFFEE SECTION COMMITTEE of the United Planters' Association of Southern India, held at 'Glenview', Coonoor, on 11th and 12th October 1940.

Present.—Mr. Ivor Bull (*Chairman*), Messrs. H. Gerry, Sylvester Pais, E. H. Young, C. L. J. Humphreys (*Members*), Mr. J. R. N. Pryde (*President, U.P.A.S.I.*), Messrs. F. E. James, E. L. Poyser, E. H. Francis (*Visitors*), and Lt.-Col. C. H. Brock (*Secretary*).

Minutes of the previous meetings.—The Minutes of the two previous meetings held on the 7th of August 1940 were confirmed.

Letters regretting their inability to attend the meeting were recorded from Messrs. W. K. M. Langley, H. S. Cameron and N. Kirwan.

The Chairman expressed his thanks to Messrs. F. E. James, E. L. Poyser and E. H. Francis for attending the meeting to assist them in discussing the Coffee Marketing Control Scheme.

Coffee Marketing Control.—The Committee recorded Mr. James' confidential report on the proceedings of the Coffee Control Conference which was held at Madras on the 18th and 19th September. The meeting then proceeded to discuss the various points drawn up at that Conference, and made recommendations regarding some of them.

At the conclusion of the discussion, the Chairman paid a warm tribute to Mr. F. E. James for the able manner in which he had furthered the cause of coffee growers during the proceedings at the Conference in Madras.

Coffee Quality.—The receipt of the Annual Report of the Scheme for investigation into Coffee Quality for 1939-40, issued by the Director of Agriculture, Mysore, was recorded.

Indian Coffee Cess Committee.—(*a*) The receipt of a Memorandum on Coffee issued by the Indian Coffee Cess Committee dated 7th September 1940 was recorded.

(*b*) It was noted that a resolution had been tabled to be put to the Legislative Assembly asking that the propaganda work, carried out by the London Board, should be drastically curtailed. The Committee agreed that this would be a grave mistake and would result in all the monies spent hitherto being thrown away. In view of the cess being a purely export one, if the activities in London were curtailed, exporters, although they had subscribed the whole of the funds of the I.C.C.C., would get nothing in return. Exports must be encouraged to prevent the Indian market being flooded. Mr. F. E. James was requested to oppose this resolution as vigorously as possible.

(*c*) It was recorded that the Committee's recommendation for the appointment of a Publication Sub-Committee of the Indian Coffee Cess Committee Bulletin would be placed before the Executive Committee of the I.C.C.C. at its meeting to be held shortly.

Destructive Insects & Pests Act, 1914.—Correspondence that had taken place between the Association and the Government of India, Department of Education, Health and Lands, was recorded. It was noted that the Government of India did not consider, in present circumstances, there was any justification for disturbing the reciprocal arrangements, which have been entered into with the Government of Burma, regarding consignments of coffees from India into Burma and vice versa. If, however, from actual experience of the working of these arrangements, it is established that there is a need for more stringent regulations, the Government of India would be pleased to consider what steps can suitably be taken.

Colouring of Coffee.—The meeting was informed that the Mysore Government were prohibiting the use of machines for colouring coffee in Mysore State. The Secretary was instructed to address the Indian Coffee Cess Committee to ascertain particulars of this reported action and, if this check on the colouring of coffee was proving effective in Mysore State, he was requested to ask the I.C.C.C. to ascertain from the Government of Madras whether similar steps were now being taken in that Province.

Pilferage of Coffee in transit at Railway Stations.—In reply to enquiries made, it has been ascertained that none of the Curing Firms addressed had experienced any serious annoyance from the pilferage of coffee in transit at Railway Stations.

Minor Products—Medicinal Plants.—The Chairman drew the attention of the Committee to enquiries that were being made by the Imperial Council of Agricultural Research to ascertain if various medicinal plants could be or were being grown in India. The drugs extracted from these plants were normally obtained from outside India. The only detailed information obtainable in South India was received from the Director of Agriculture, Madras, who gave particulars of the six of the nine products enquired about.

The Secretary was instructed to pass on this information through the medium of the *Planters' Chronicle*, so that any planters who were interested might communicate with the Madras Agricultural Department.

COONOOR,
30th October 1940.

C. H. BROCK,
Secretary.

U. P. A. S. I. TEA PRODUCT SECTION

Extracts from the draft proceedings of a Meeting of the TEA SECTION COMMITTEE of the United Planters' Association of Southern India, held at 'Glenview', Coonoor, on 11th October 1940.

Present.—Mr. J. E. Sampson (*Chairman*), Messrs. R. Fowke, Eric Johnson, J. L. H. Williams, P. A. Naylor and W. A. J. Milner (*Members*), Mr. J. R. N. Pryde (*President, U.P.A.S.I.*), Mr. F. E. James, and Lt.-Col. C. H Brock (*Secretary*).

A letter from Mr. C. P. Rajan, regretting his inability to attend the meeting, was recorded.

Proceedings of previous meetings.—The Minutes of the meetings of the Committee held on 5th and 6th August 1940 were confirmed.

Government grant for Scientific Department.—It was recorded that the Executive Committee had addressed the Government of Madras requesting that the annual grant to the U.P.A.S.I. Scientific Department be restored to the sum of Rs. 21,000.

Future of the Tea Scientific Department.—The Secretary announced that the replies received up to date to Circular No. DT. 22, dated 3rd May 1940, addressed to all members of the Section, asking if they approved of the suggested programme and were prepared to support the Department for a further term of three years, was as follows:—

Promises of support from existing subscribers ...	128,421	acres
New subscribing area promised	529	,,
Total ...	128,950	acres
Possible support not yet definitely agreed to ...	577	,,
Refusal to support	2,542	,,
Replies not received from	4,408	,,

In view of some opinions received, and a certain amount of the support promised being limited to a maximum of four annas an acre, it was suggested that, for the time being at any rate, the proposal that the Department should itself place trained field assistants on experimental plots loaned to the Department in various districts might be modified to the extent that the work on such experimental plots should be done by the estates themselves under the supervision of the Tea Scientific Officer. The Secretary was instructed to send reminders to those who have not replied, pointing out that this modification would ensure the subscription not exceeding four annas per acre per annum during the three years for which support was requested.

Tea Export Trade and Out-Markets.—The Committee recorded a letter dated 26th June, from the South Indian Association in London, with reference to conditions which had been agreed to by the Ministry of Food for enabling producer exporters to give buyers in foreign markets increased freedom in the purchase of their requirements.

Tenders by Agencies and Companies; 5% Cut in Export Quota.—In a letter dated 8th August 1940, the South Indian Association in London dealt with the following two points:—

(i) The Controller's attitude towards the price payable in the case of tenders submitted by Agencies and/or Companies as distinct from those submitted by individual estates. In this connection the S.I.A. mentioned that, as the submission of tenders on an agency basis is understood to have been adopted only in respect of North India, it was not considered necessary to cable the U.P.A.S.I. on the point.

(ii) The recently announced cut of 5% in the export quota and resultant position of producers participating in the Long Term Contract. On this point the Ministry of Food have agreed that special consideration will be given to producers who are able to show that, as a result of the 5% cut in the export quota, genuine hardship would result from carrying out their contractual obligations to Government under the 1940 contract.

This correspondence was recorded.

Contract for 1941.—It was recorded the Indian Tea Association, London, had notified that preliminary negotiations were in progress between the Advisory Committee and the Ministry, and that further information would be sent as early as possible.

The Secretary was instructed to cable to the South Indian Association in London requesting that they consider the possibility of including in the shipments under the new contract teas which had been manufactured before the 31st December, a provision which was not admissible under the current contract. Also a request to include the Indian Export Cess and the Travancore Export Duty in the purchase price instead of these items being a matter of subsequent refund as at present.

Excess Tenders.—With reference to the proceedings of the last meeting of the Committee, it was recorded that, on representations being made to the Assistant Tea Controller, Coonoor, the latter extended up to 20th August 1940 the period within which the information, called for in his Circular No. E/23 of 30th July, had to be submitted.

U.S.A. Tea Importation Act.—It was recorded that, on the 7th August 1940, the Indian Tea Association, Calcutta, notified that the Indian Tea Association, London, had informed them that they had received a telegram from the Tea Association of U.S.A. advising all tea exporters that the Tea Importation Act remains in force and that they expected more rigid enforcement of its terms. On the 15th August the I.T.A., Calcutta, wired to the effect that, in reply to their enquiry as to whether the above telegram referred to the ruling of the U.S.A. which permitted the use of lead lined chests having a paper lining between the lead and tea, London replied that the U.S.A. Tea Association had wired to the effect that paper lining was required where lead is used, but that the examination of teas will be rigid as regards quality, which must be equal to or better than the Government standard.

Indian Tea Market Expansion Board—Work in South India.—In the minutes of a meeting of the Advisory Committee for South India, held on 6th August 1940 and published in the *Planters' Chronicle* issue of 14th September, a hope was expressed that the Commissioner would be able to arrange for an Indian Tea Market Expansion Board stall at the Sri Chithra Exhibition in Trivandrum as in previous years. A letter was recorded from the Commissioner, dated 2nd September, stating that arrangements had been made for the Board to participate in the exhibition. This letter was suitably acknowledged, and copies were forwarded to the Advisory Committee Members and the Association of planters of Travancore.

Internal Restriction Scheme—Abstract of Final Returns.—Mr. Naylor explained that he had consulted the Joint Controller regarding the suggestion made at the last meeting that the form of return to be completed by signatories might be simplified. The Joint Controller had pointed out that, however simple the form might be, he was quite sure that it would not lead to any increased number of returns being received.

Travancore Food Adulteration Act.—A letter was addressed to the Government of Travancore, on 13th August 1940, expressing appreciation that the provisions of the Travancore Food Adulteration Act had been made applicable to all municipalities in the State, and respectfully drawing attention to the necessity for adequate machinery and organised administrative efforts to ensure that the provisions of the Act are in fact enforced. The Chief Secretary to the Government of Travancore replied, under date 29th August, that the Presidents of Municipal Councils, who are Food Inspectors under the Act, are being requested to see that the provisions of the Act are vigilently enforced. The Committee recorded this announcement with satisfaction.

Export Duty on Tea in Travancore.—On 19th August 1940, a letter was sent to the Indian Tea Association, Calcutta, on the lines of the minute of this Committee's meeting held on 5th August. In reply, the I.T.A. stated that they had passed on the letter to the Tea Controller for his comments, but no further communication had been received from that quarter. However, in a letter addressed to the Chairman by the Assistant Tea Controller, dated 17th September, it is understood that the question has been brought to the notice of the Commerce Department of the Government of India, who had in turn communicated with the Travancore Government, and it is believed that the matter has now been satisfactorily settled.

Imports of Tea into the United Kingdom by Parcel Post.—Writing on 13th September 1940, the Indian Tea Association, Calcutta, notified that the Ministry of Food was permitting bonafide unsolicited gifts of tea by parcel post into the United Kingdom provided such parcels are addressed to individuals and marked 'Gifts'. Such parcels have to be covered by export licenses in the same way as was the case before the Ministry of Food prohibited the importation of parcels of tea by post into the United Kingdom. A note to this effect was published in the *Planters' Chronicle* issue of 28th September 1940.

Pliofilm Tea Chest Linings.—The Goodyear Tyre & Rubber Co. (India), Ltd., wrote to this Association on 28th June 1940 giving particulars about Pliofilm and, among other points, stated that the Ceylon Tea Commissioner had reported that the Director of Tea Supplies had intimated that producers may be allowed to use Pliofilm linings in trial shipments to the United Kingdom, and that tea buyers in Canada and the United States had requested test shipments of hundreds of cases of tea with Pliofilm linings from their forwarding agents. Mr. E. H. Francis (then President of the Association) also wrote to Mr. Manning suggesting that, with the approval of the Advisory Committee, the suitability of the material for packing tea might be investigated. Recorded.

Caffeine from Green Tea Leaves.—Writing under date 16th September 1940, the Indian Tea Association, Calcutta, pointed out that a certain firm had been asking for assistance in the collection of green tea leaves for the purpose of extracting caffeine, and that the Association had recommended its members not to enter into any transactions for the sale of leaves for this purpose. It was recorded that copies of this communication had been forwarded to District Associations interested in tea.

Gifts of Tea to the Troops in India.—It was recorded that the Indian Tea Association, Calcutta, does not intend to take up the matter of free gifts of tea to the Troops in India in view of the fact that all estates in Bengal and Assam have been asked to contribute 2½ annas per acre to the provincial war funds in those provinces.

As there were other difficulties in connection with the original proposal, the Committee resolved to drop the idea in favour of action, similar to that taken by the I.T.A., being inaugurated by the U.P.A.S.I.

Tea Export Quota.—It was noted that a further .75% export quota had been released making a total of 61.75% for the year, and it is understood that the position brought about by the adjustments necessitated by the 3% reduction is to be reviewed by the Joint Controllers in due course so as to see what, if anything, can be done.

Extension of the Indian Tea Control Act after 31st March 1943.—The Secretary was instructed to enquire from the South Indian Association in London if any discussion had taken place regarding the possible extension of the International Agreement after the 31st March 1943.

COONOOR,
30th October 1940.

C. H. BROCK,
Secretary.

ETHYLENE DICHLORIDE AS A RUBBER SOLVENT

The rate of solution of rubber in ethylene dichloride is one and a half times to twice as fast as in petrol, according to tests carried out last year in the U.S.S.R. Ethylene dichloride does not appear to have found extensive use as a rubber solvent in this country and may be worthy of reconsideration.

Although containing a high proportion of chlorine, it is capable of burning, but only as long as the vapour remains in contact with a flame. The question of stability is always to the fore in using chlorinated solvents. Ethylene dichloride does not develop any considerable acidity when in contact with water at the ordinary temperature, but the Russian investigation disclosed a very considerable increase in acidity after prolonged heating at higher temperatures.

Unless absolutely free from water, therefore, the boiling solvent is likely to exert a rapid corrosive action upon vessels constructed of iron, copper, galvanised iron and tinned iron. Exposure to light also promotes acidity: in a series of tests the acidity increased seven-fold in the light after 142 days, and only two-fold under otherwise identical conditions in the dark. The narcotic action of aliphatic chlorinated solvents must also be kept in mind when using ethylene dichloride. Its effects are similar to those of chloroform.

—*Rubber Age.*

COFFEE CONTROL AND THE SMALL GROWERS

Contributed

A number of questions have been asked by small growers as to how the proposals which have been submitted to the Government of India will affect them if they come into force, and the following notes endeavour to answer some at least of the questions.

First of all, the proposals will affect all owners of 25 acres of coffee and upwards and all these growers will have to be registered, growers paying a coffee assessment for this acreage, but actually cultivating less than 25 acres of coffee will have to apply to their local Government for exemption from the regulations. It is hoped however that with experience of the working of the proposed scheme, it may be possible to extend control to smaller sized estates, even down to those of 10 acres of cultivated coffee, so that the quantity of 'free' coffee on the market from small Estates will be reduced to a minimum.

The machinery of control will be provided by the Indian Coffee Cess Committee, which will become the Board of Control to which additional powers will be given and the Executive Officer will be called the Controller.

The object of the proposals is to ensure a fair price for the coffee grower for all coffee sold in India, so that even if shipping is severely restricted, he will at least be assured of a reasonable price for this important proportion of his crop.

The method by which it is proposed to achieve this result is by controlling the quantity of coffee released in India for local sales, to the actual requirements of the local market.

To effect this control, the Board will decide annually what percentage of the coffee belonging to all registered growers can be allotted for free internal sales, a grower's 'internal quota'. The rest of each grower's crop will go into the 'Surplus Pool'. It should be clearly understood that there is no question of any grower being allotted a quota by weight, he will simply be told that a certain percentage of his coffee is free for internal sales, and that the balance must go into the 'Surplus Pool'.

This percentage will apply right through a grower's produce, whether it be Arabica or Robusta, Parchment or Cherry.

The 'internal quota' will be materially less than the actual requirements of the Indian market, thus leaving in the hands of the Control Committee the power to control prices by either holding up or releasing coffee from the 'Surplus Pool' as occasion necessitates.

The 'Surplus Pool' will contain, in addition to the balance over and above the Indian markets requirements, the surplus of coffee normally exported. It will then be the duty of the Control Board to dispose of this 'Surplus Pool' to the best advantage.

A set scale of valuations for all coffee entering the pool will be arranged.

Values for Arabica will vary according to the district of origin, according to whether the coffee is Parchment, Whole-crop Cherry, Strippings or any other class of coffee, and of course each 'grade' in these categories will have its own value. A similar scale of values will be prepared for Robusta coffee.

Each grower's interest in the pool will be represented by the quantity of coffee he has sent to it multiplied by its value according to the above set scale of values.

Small growers like large growers, may fall into various categories:—

(*a*) Those who send their crops to Curing Works whether in the form of Parchment, Cherry, or hulled or pounded coffee.

(*b*) Those who send their Parchment to Curing Works but hull their Cherry coffee on the estate by mechanical means and dispose of it on the estate.

(*c*) Those who hull all their coffee on the estate by mechanical means and dispose of it there.

(*d*) Those who sell their coffee by the bushel on the estate unhulled, or merely pounded.

The proposals which have been drawn up, have been designed to make as few alterations as possible in the present methods or disposing of crop but an effective check both on the quantity and the quality of the coffee sent to the Surplus Pool is of course essential.

To ensure that this takes place, all curers will be licensed and it will be their duty to ensure that all coffee sent to them by registered growers is divided proportionately, as each outturn is completed into an 'Internal Quota' and a 'Surplus Pool' quota.

An elastic definition has been adopted for 'Curer' and apart from the usual Curing Works, all owners of mechanical hullers, who normally hull either the whole of their crop, or their Cherry coffee will be entitled to be licensed as curers. The books and premises of licensed curers will be open to inspection.

The divisions of the crop belonging to growers in classes (*a*), (*b*) and (*c*) into internal quota and Surplus Pool quota will therefore be carried out by Licensed Curers under the supervision of the Board.

Growers who come into class (*d*) and who wish to continue to sell their crop unhulled from the estate can continue to do so, but in this case they will have to be licensed as well as registered, and their books and premises will be open to inspection to ensure that not only is the proper quantity of coffee being delivered to the Pool but also the proper quality, i.e. a grower will not be entitled to dispose of his best Cherry coffee for internal sales and send his Strippings to the Pool, he must send to the Pool the proper percentage of each kind of Cherry coffee.

The coffee for the Surplus Pool will have to be delivered at the expense of the estate to the most convenient storing place notified by the Control Board. It is anticipated that the larger curing works will also be notified as storing places.

A cess will be levied on the internal quota of each grower at a fixed rate per cwt., of coffee, and will be collected by debiting the amount payable to each grower's credit from his share of sale proceeds from the 'Surplus Pool'.

Payments from the 'Surplus Pool' will be made by the Board at regular intervals to all interested.

All exports of coffee from India will be prohibited, otherwise than from the Pool.

Any control proposals to be acceptable to Government must be based on equity to all members of the coffee trade, and also to the general public, but it must not be forgotten that the present Scheme is a grower's

scheme and will be administered by a Committee on which growers predominate.

This fact in itself should settle most doubts which might arise.

To summarise some of the benefits of the proposals:—

(*a*) Every registered grower large or small will be on exactly the same footing.

(*b*) Each will be able to dispose of his 'Internal Quota' through any special marketing agency he may have built up, or through his usual selling agents.

(*c*) He will be assured of a profitable price for the whole of this portion of his crop.

(*d*) He will be assured of better prices for his 'Surplus Pool quota' than if the whole of this coffee had been dumped on an overloaded Indian market.

(*e*) The cess on internal sales will mean that at last the I.C.C. Committee will have enlarged funds for developing the Indian market for coffee.

(*f*) His quota coffee in the Pool has a definite value, and offers a security for borrowing. Without control, coffee would have little value if any if offered as security, for it might and will be unsaleable, whereas a large part of the Pool coffee *must* be sold, for it contains coffee needed on the Indian market, which will be released on it at a reasonable price.

(*g*) If any anomaly shows up in the course of the working of the proposals, legitimate complaints will be dealt with by a Board on which growers' interests are in a majority.

The question in any case is not merely one of 'How much do I get out of the Scheme?' but of 'How can the Indian Coffee Market be saved from a complete collapse without some sort of Control?'

SYNTHETIC RUBBER IN AMERICA

It is reported that Messrs. B. F. Goodrich & Co., one of the largest American manufacturers of rubber products, has recently announced the successful production of synthetic rubber on a commercially profitable basis. It is further stated that this production and that of another synthetic rubber developed by the Standard Oil Company of New Jersey will make the United States, which now uses half the natural rubber in the world, able to get along without natural rubber if the supply of that raw material from the East Indies is at any time cut off.

Motor-car tyres in which from 50 to 90 per cent of the whole will be synthetic rubber is expected to cost, in the beginning, one-third more than natural rubber tyres, but it is likely to be reduced as production increases. While the natural product combines resilience with many other properties, it has taken those working on synthetic production a long time to overcome certain difficulties, notably that of reproducing the property of adhesion to fabric and the general adaptability of plantation rubber.

From the scientific point of view, the research work is to be congratulated, but, from the economic standpoint, the rubber growers are equally entitled to ask, why go to so much trouble while the world's supply of the natural product is more than ample.

—*Industrial Bulletin.*

WAR RISKS INSURANCE SCHEME

A Note by F. E. James

1. The scheme is to take effect on the 1st of November, 1940.

2. The scheme applies to all commodities which are on land or inland waters in British India, except those which are specifically exempted. Among the exempted items are immovable property, growing crops, various minerals, coal, cement, jewels and mineral oils.

3. Commodities are insurable only by persons (i.e. companies etc.) who hold them for sale on their own account or as agents, or who hold them as materials from which they will manufacture goods for sale. It does not matter whether the persons concerned are in British India or not. It is the commodity that is insurable, provided it is in British India. If, on the other hand, Indian States apply their own War Risks Insurance Scheme on the same lines, then commodities in those States will also be insurable, whether the persons holding them for sale are in British India or not.

4. All persons who hold for sale any commodity or commodities other than an exempted commodity, to the value of Rs. 20,000 or more within any one district or Presidency town in British India will, as from the 1st of November 1940, be compelled to insure such commodity or commodities to the full extent of their value. They may, of course, insure their commodities before the 1st of November 1940 if they wish. Also, if they hold less than Rs. 20,000 worth of commodities, they may insure if they wish to do so at the rates specified, though there is no compulsion in the matter.

5. Growing crops, e.g. tea, coffee, etc., are excluded from the operation of the scheme. There are also excluded agricultural products and articles of food and drink wholly or partly manufactured by a person carrying on the business of producing agricultural products when on land occupied by him in the course of that business. This means that tea in the process of manufacture in a factory situated on the land of the grower will be exempt. Similarly coffee, when undergoing any process while on the land of the grower, will be exempt. The same applies to rubber, if that is regarded as an agricultural product.

6. When tea has been manufactured in the factory which is situated on the land of the person who is carrying on the business of producing tea (i.e., the estate of the proprietor, whether company or individual), then it comes under the scheme and must be insured, provided the value is Rs. 20,000 or more. Goods sold ex factory are liable to insurance under this scheme, provided their value is not below the minimum limit, immediately the property in the tea passes from the buyer to the seller, i.e. when the contract is made. This may be the case even though the tea is still on the land of the grower. If the sale of the tea is effected outside India, then once it has left the land of the grower, i.e. the person who is the seller of the goods, he must insure the tea as long as it is in British India in its transit down to the coast and on to the ship until it leaves territorial waters. If the tea is sold in India, otherwise than ex factory, then the grower is responsible for its insurance until the property has passed from the seller to the buyer. When the property is passed, then the person who buys the tea is responsible for seeing that it is insured under the scheme.

7. It is possible that a grower may send a consignment of tea down to a warehouse at the Port which is less in value than Rs. 20,000 and thus is excluded from the scheme. He may despatch other consignments before the first consignment has been shipped, the net result being that the total value of the tea in the warehouse may be more than Rs. 20,000. In this event, the seller is responsible for insuring that tea under the scheme immediately it reaches the Rs. 20,000 limit.

8. When coffee leaves the land of the person who is carrying on the business of producing coffee (i.e. the estate of the proprietor whether company or individual), it comes within the scope of the scheme, subject, of course, to the Rs. 20,000 limit referred to above. Coffee in the hands of the curer for curing and sale, either on the curer's own account or agent, will be insurable by the curer.

9. Government have gazetted 108 insurance companies as their agents, and anyone who wishes to take out an insurance policy under the scheme must apply to one of these agents on a prescribed form.

10. All policies are valid until the end of the quarter in which they are issued. That is to say, a policy which is taken out on the 1st of November 1940 is valid until the 31st of December 1940. The rate of premium which may be charged from time to time by the Central Government is at present one half anna per hundred rupees per month or part of a month, subject to the payment of a minimum premium. A person may cover all his goods held throughout India in one policy if he so desires, or he may take out separate policies for goods held in each district. It is, however, essential that the policy or policies should cover the total value of all goods held at any one time. This means that, if the amount of goods in the possession of a person actually exceeds the amount covered by existing policies, a policy for the excess amount must be taken out. On the other hand, refunds of premium are not allowed if the value of insurable goods falls below the amount covered.

11. In certain cases floating policies may be issued, and details of these can be obtained on application to any insurance company which is appointed as an agent of Government under the scheme.

12. This is a general note on the implications of the War Risk Insurance Scheme and does not pretend to be exhaustive. No doubt many individual cases of difficulty will arise, but the general principles set out above, if applied carefully, should answer most questions relating to plantation products.

RUBBER SHIPMENTS

The International Rubber Regulation Committee's bulletin for July shows that 29,447 tons more rubber was shipped from the producing countries in June than was used. World net exports were 110,453 tons, and world absorption 81,006. For the first half of 1940 the over supply was 113,148 tons, exports being 672,231 tons and absorption 559,083. Total quota countries (except Thailand) again shipped beyond their permissible allowance in June, 102,615 tons being despatched, an over-export of 8,531 tons. In May the excess export was 381 tons. For the first six months of this year, 605,591 tons were shipped, as against a quota of 594,500 tons. Some 7,599 tons more than the permissible quantity was exported in 1939, so that excess shipments to date total 18,690 tons.

—*T. & R. Mail.*

INDIAN COFFEE CESS COMMITTEE

The following is a review of the activities of the Indian Coffee Cess Committee in India during the second quarter of 1940:—

Several changes took place in the personnel of the Committee during the quarter under review. Mr. N. Kirwan who had resigned his seat as a representative of the trade was renominated as a representative of the United Planters' Association of Southern India in the place of Mr. J. H. Sprott. Mr. E. H. Stanes, M.C., filled the place vacated by Mr. Kirwan, and Mr. A. R. C. Westlake replaced Sri P. H. Rama Reddi. In June, Mr. R. C. Morris, too, resigned.

Owing to the resignation of Mr. J. H. Sprott, the Vice-Chairman-Elect for the year 1940-41, Mr. R. C. Morris continued as Vice-Chairman till his resignation in June.

Consequent on these resignations and the leave of Lt.-Col. Murland out of India, Diwan Bahadur K. Chengappa was co-opted on the Executive Sub-Committee in the place of Lt.-Col. Murland, Mr. L. P. Kent in the place of Mr. J. H. Sprott, Mr. N. Kirwan, renominated taking the place of Mr. N. Kirwan, resigned.

The Market Expansion Sub-Committee for the year 1940-41 was appointed during the quarter under review. Besides the Vice-Chairman, who is its ex-officio Chairman, the Sub-Committee consists of Diwan Bahadur K. Chengappa, Mr. N. Kirwan and Mr. Sylvester Pais. The Sub-Committee met on the 17th June and reviewed the propaganda work in progress in India, and drew up a revised programme of work for the year 1940-41 for submission to the Executive Sub-Committee which was to meet the next day.

The Executive Sub-Committee met on the 18th June, and after a detailed examination of the financial position of the Committee, allotted a sum of Rs. 82,000 for propaganda work in India in the current year, as asked for by the Market Expansion Sub-Committee. This meant an increase of Rs. 12,500 over the allotment previously made.

Three more Coffee Houses, one in Simla, another in Old Delhi and a third in Cochin, were opened during the quarter, bringing the total number to 14. Over a lakh and a half cups of coffee were distributed monthly by the India Coffee Houses in different parts of the country. There was a slight fall in the sales of hot coffee, which to some extent was offset by the increased demand for cold coffee. A welcome recovery in June was noticeable everywhere except at Delhi and Lahore where hot weather conditions continued to retard sales.

The Demonstration Van, working in Bangalore, did better than in the previous quarter. The Van sales increased by about 50 per cent, being about 60,000 cups in the quarter ended June.

Having completed its programme of work in Chengannur, the Coffee Demonstration Party (Travancore) moved on to Chenganassery in June. As a result of the work of the party, Coffee Marts for selling freshly roasted and ground coffee were opened by the public at Chengannur.

Gift of Coffee to the Canadian Troops.—The contributions of gifts of coffee and cash donations, in lieu of coffee received for the purpose amounted to 60½ cwt. and Rs. 1,014-10-0 respectively on the 30th June.

Gifts of Coffee for Propaganda Work in India.—The gifts of coffee and cash donations received for propaganda work in India reached the total of 76⅜ cwt. and Rs. 62 respectively, at the close of the quarter under review.

THE U. K. PURCHASE TAX

Under the original Purchase Tax Bill, any products of the rubber industry which found their way from the manufacturer or wholesaler, as the case might be, to the retailer would have attracted tax. In the amended scheme, while the tax is still levied at the wholesale stage, it is chargeable only on goods of a kind which are specified.

In actual practice it is doubtful whether this change is of any great importance as regards sales. There are very few manufactured articles sold by retail which are not scheduled, while as regards purchases, the materials used in the industry and its fuel and plant are in one way or another still outside the tax. The rate of the tax, which was not laid down in the original Bill, is now fixed either at 33⅓ per cent or at 16⅔ per cent in accordance with whether the goods are, in the last resort, non-essential or really necessary.

The following would appear to be the articles of interest to the rubber industry which are subject to tax:—

At 33⅓ per cent, gloves, floor coverings, pouches and similar receptacles used for domestic or personal purposes, toys and games, appliances, apparatus, accessories and requisites for sports, games, gymnastics or athletics (other than garments and footwear), office requisites and tyres.

At 16⅔ per cent, garments, footwear, and medical and surgical appliances.

Pneumatic tyres of a sectional width of not less than five inches, provided they are not suitable for use on road vehicles, other than omnibuses, char-a-bancs, ambulances and fire engines, which are constructed or adapted for the carriage of passengers, are exempt from tax, as also are young children's garments and footwear, and medical and surgical appliances of an exceptionally costly character. The Government intend to issue lists more closely defining some of the articles mentioned in the schedule, so that the above should only be taken at the moment as a general guide.

—*Rubber Age.*

TEA QUOTA PRICES

The Quota prices ruling in South India on 6th November were:—

Tea Export Rights ...	... 8 annas 3 pies per lb.
Internal Market Rights ...	... one anna per lb.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 28th October were:—

Rubber, including export licenses	... 55.50 cents a lb.
Rubber Export Quota ...	... 6.75 cents a lb.
1st quality rubber alone ...	... 49.00 cents a lb.

EXPORTS OF COFFEE, RUBBER AND TEA FROM SOUTH INDIAN PORTS

From	Ceylon	United Kingdom	Europe ex. United Kingdom	Asia ex. India & Ceylon	Africa	America	Australia	TOTALS TO FOREIGN COUNTRIES	India
COFFEE	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
From 1-1-1940 *to* 31-8-1940									
Madras	4	2	20	984	...	...	...	1,010	112
Calicut	...	11,300	1,529	200	...	910	914	14,853	...
Cochin	...	7,245	15,148	311	...	...	1,156	23,860	...
Mangalore	...	16,684	15,451	15,036	200	925	4,074	52,370	...
Tellicherry	...	2,452	...	64	...	...	659	3,175	...
Bombay	...	1	1	26	...	...	...	28	...
Dhanushkodi	122	...	...	...	...	...	...	122	...
Total ...	126	37,684	32,149	16,621	200	1,835	6,803	95,418	112
RUBBER	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-1-1940 *to* 31-8-1940									
Calicut	219,488	383,139	...	...	...	779,520	...	1,382,147	...
Cochin	1,873,793	9,335,490	185,392	69,123	43,904	1,899,136	...	13,406,838	...
Mangalore	5,097	69,216	...	...	...	49,280	...	123,593	...
Tuticorin	259,504	8,960	...	...	...	...	...	268,464	...
Alleppey	171,560	179,200	...	56,000	...	509,600	...	916,360	206,528
Total ...	2,529,442	9,976,005	185,392	125,123	43,904	3,237,536	...	16,097,402	206,528
TEA	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
From 1-4-1940 *to* 31-8-1940									
Madras	...	88,519	...	2,060	...	...	...	90,579	13,000
Calicut	7,229	3,308,101	...	...	...	43,930	333	3,359,593	32,948
Cochin	748,632	23,084,433	...	408	...	498,293	1,870	24,333,636	18,819
Mangalore	...	48,597	...	...	...	...	...	48,597	38,432
Tellicherry	...	241,361	...	...	...	...	...	241,361	1,063
Tuticorin	53,198	1,400,266	...	...	...	...	...	1,453,464	...
Dhanushkodi	227,144	...	...	...	...	...	...	227,144	...
Total ...	1,036,203	28,171,277	...	2,468	...	542,223	2,203	29,754,374	104,262

MARKET REPORT AND PRICES

Calcutta (*Issued by the Calcutta Tea Brokers' Association*).

Sales Nos. 18 and 19 were held on 22nd, 23rd and 28th October 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 18	Sale No. 19	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	...	13 5	12 4	12 2	9 3
For Internal Consumption :—					
Leaf Teas ...	4 2	...	3 11	4 9	6 1
Dusts ...	4 11	...	4 10	4 4	4 4
Green Teas ...	6 6	...	6 6	5 2	6 1

RUBBER—London Rubber on November 4, 1940, 11¾*d*. (Buyers).

Colombo (*Issued by the Colombo Brokers' Association*).

Average prices obtained (in cents.)

SOUTH INDIAN TEA SALES

Oct. 22 & 29, 1940

There was only one invoice on sale which was incomplete.

RUBBER SALES

	Oct. 24, 1940
Ribbed Smoked Sheet ...	57½
Contract Crepe ...	56½ to 56¾
Mottled Brown Latex Crepe	52 to 53
Brown Scrap Crepe ...	50½ to 50⅝

Madras (*As on 7th November 1940. Issued by Messrs. Paterson & Co.*).

During the past fortnight the local share market has ruled remarkably steady. The tendency if anything, has continued upwards. The general feature of interest has been the publication of the Government's Subsidiary Budget involving an increase of 25% on taxes on income. This announcement has had practically no effect on values of either Government loans or stocks and shares and it appears that the market had already discounted in advance some such increase in taxation. The funds in all the main centres continue in copious supply and Call money is quoting at ¼%. The Government security market also remains exceptionally firm while at the close there has been a very pronounced demand for all the Mysore Government loans, interest on which is exempt from British Indian income tax and super tax.

RUBBER

The price of the raw commodity has ruled very steady throughout the period under review, being quoted at around 48 cents per lb. The export coupon remains unaltered at 6 cents per lb. In London the Spot price is slightly lower at 11 11/16*d*. per lb. The volume of business in local shares has probably not been so large as in the previous fortnight. This is due more to the absence of available scrip than any other reason. Prices on balance show little to no alteration. Cochin Malabar ordinaries met with support at Rs. 6 to Rs. 6-2 as., while there was a good demand for Malankaras which turned buyers at Rs. 29-8 as. Thirumbadis were also in small demand at Re. 1-8 as. After a considerable absence business was reported on the local Exchange in Vaikundams at Rs. 8 and Cochin Rubbers at up to Rs. 14-8 as. There were good buyers of this latter scrip over at the close. Among the A. V. Thomas group, the market was somewhat quieter. Kalpettas were offered at Rs. 16-12 as., while Midlands were slightly lower at Rs. 4-6 as. Rajagiris were unchanged at Rs. 4-8 as., and Velliamuttams at Rs. 17½. A transaction was reported in Malayalams at 25*s*., otherwise there is no business recorded in any of the sterling issues, but there were fairly large parcels of Kerala Calicuts available locally at ⅛*d*. This latter company has declared a dividend of 1*d*. per share, the same as last year, which amount is capitalised, making the shares now 2*s*., fully paid. The total profits for the year disclosed are £24,725 as against £8,142 for the previous year.

TEAS

Price movements were narrow and business restricted. Periakaramalais were on offer at Rs. 17-4 as. but there were good buyers for Peermades at Rs. 25-8 as. United Nilgiris recorded a slight gain at Rs. 114 but Chembra Peaks were unaltered at Rs. 3-2 as. Among the cheaper priced shares, speculative business was put through in Nilgiri Neerugundis but at the close there were sellers over at Re. 1-3 as. The report for the financial year of this company is just out and discloses a nett profit for the year of Rs. 31,130 compared with Rs. 16,023 for the previous year. Rs. 80,000 is transferred from Profit & Loss to debenture reserve and the balance of Rs. 33,626 is carried forward. Among fixed interest securities, Ouchterloney Valley debentures changed hands at Rs. 103 and had buyers over. Small business was put through in Devon Teas preference at Rs. 98.

ROAD TRANSPORT IN TRAVANCORE

The Administration Report of the Transport Department of Travancore State for the year states that the Department has under contemplation a daily goods lorry service from Cape Comorin up to Alwaye, connecting the Northern and Southern ends of the State, and this will be started as soon as certain bridges and culverts on the M.C. Road which are now in an unsafe condition are rebuilt or repaired as the case may be. With the introduction of this service together with the extension of passenger service now in contemplation, the various centres of industrial and commercial importance in the State will be linked together, and the public will be provided with a unique facility in the matter of road transport of goods such as is available only in the Railways elsewhere.

The net receipts after deducting expenses were Rs. 1,90,141, out of which contributions have to be made to the Depreciation and Insurance Reserve Funds besides payment of interest at 4 per cent on the capital outlay leaving a small net profit available on the capital investment. The capital investment at the close of the year amounted to Rs. 8,39,886, and the total number of vehicles in operation was 101. Route lengths totalled 235 miles.

The department was assiduous in providing all amenities for passengers. A high standard of tidiness is maintained in the vehicles and the seats are regularly sprayed with insecticides. Civility and courtesy towards passengers are insisted on and any member of the staff acting otherwise is severely dealt with.

—*I.R. & T.D.A. Monthly News.*

FORTNIGHTLY RAINFALL STATEMENT

October 13, 1940 to October 26, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. **Kalthuritty** ...	3·81	2·09	100·38	106·28	25. **Kotagiri** ...	1·64	...	37·09	38·73
3. **Kallar B'dge**	3·75	1·03	124·83	129·61	26. **Ootacamund**...	2·80	...	35·66	38·46
4. **Koney** ...	2·39	6·97	104·03	113·39	27. **Yercaud** ...	2·41	...	45·41	47·82
8. **Twyford** ...	1·19	0·63	226·94	228·76	30. **Devarshola**				
9. **Pettimudi** ...	1·25	0·56	296·88	298·69	**T.E.S.** ...	0·66	0·54	65·70	66·90
10. **Kalaar** ...	0·67	1·51	237·65	239·83	31. CALICUT ...	1·07	...	108·03	108·10
11. **Chittavurrai**...	0·48	0·93	45·11	46·52	32. **Kuttiyadi** ...	1·07	...	119·80	120·87
12. BODI'KANUR...	...	...	15·61	15·61	33. **Vayitri** ...	4·37	...	156·32	160·69
13. COCHIN ...	1·87	...	110·24	112·11	34. **Manantoddi**...	0·61	...	105·07	105·68
14. **Mooply** ...	2·64	2·53	117·75	122·92	36. **Bilgiris** ...	1·50	2·57	60·13	64·20
15. **Pachaimallai**	0·02	0·93	126·65	127·60	38. **Pollibetta** ...	0·78	3·73	62·03	66·54
16. **Mudis** ...	0·63	1·28	189·60	191·51	39. **Coovercolly** ...	0·63	3·42	74·52	78·67
17. POLLACHI ...	0·52	...	30·46	30·98	41. **Kadamane** ...	3.29	1·37	243·82	248·48
18. **Ropeway**					43. **Marthisub'gey**	...	3·49	122·00	125·49
Waterfall ...	0·15	1·81	70·01	71·97	45. **Balehonnur**...	0·77	4·48	110·83	116·08
21. **Kerala Estate**	2·52	2·49	147·60	152·61	46. MANGALORE ...	5·58	...	131·46	137·04
22. **Naduvattam**	0·46	..	100·86	101·32	47. MADRAS ...	0·07	...	19·56	19·63
24. **Coonoor** ...	0·11	...	29·58	29·69					

N.R. = No Return Received.

Planters' Chronicle

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All Communications to be addressed to the Editor, ' Glenview ', Coonoor, Nilgiris

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EDITORIAL

In this issue we are including a new feature which we believe will be of particular interest to our Tea readers. Mr. J. D. Manning, U.P.A.S.I. Tea Scientific Officer, receives a number of enquiries on points of general interest, and he is kindly sending us particulars of these enquiries in the form of questions and answers. On this occasion Mr. Manning deals with questions relating to Mite Damage to Tea, Borers in Grevillea, Seedlings attacked by Cut Worms, Caustic Wastes for Tea, and pH Value of Nursery Soils.

* * * * * *

We note that, in the Bill which is now before the Legislative Assembly to amend the Indian Income Tax Act XI of 1922, provision has been made to amend Section 58C so that an employee who retains his employment while serving in His Majesty's Forces may, notwithstanding that he receives from the employer no salary or a salary less than he was receiving at the time he entered His Majesty's Forces, contribute to a recognised provident fund the same amount as he would have contributed had he continued to be in receipt of his salary from his employer.

* * * * * *

There has been a certain amount of uncertainty expressed recently as to the liability of Tea under the War Risk (Goods) Insurance Ordinance. We have received a press communique from the Government of India Commerce Department which definitely states that Tea, while on the producing estate or the premises situated on that estate, being land occupied by the producer in the course of his business of producing tea, is not insurable under the Ordinance. So long, however, as it is owned by a seller of goods it becomes insurable as soon as it is moved from the producer's estate, as, for instance, when it is in transit or in the Shipping Agents' or Port Commissioners' tea warehouses or in any other premises whether owned or leased by the producer or not.

This confirms the explanation given by Mr. F. E. James in his note which we published last week. It implies that the tea must be insured by the producer as soon as it leaves his estate up to the time it is handed over to a shipping agent, or to a buyer at the place of delivery agreed to with the buyer in the terms of the contract or agreement to sell. Hence, only in the case of the sale of tea ex factory is the buyer, if a seller of goods, responsible for insurance from the moment the tea leaves the Estate.

* * * * * *

We very much regret that there was a typist's error in copying out our contributor's article on 'Coffee Control and the Small Growers' in our last issue. The mistake occurs in paragraph (*f*) on page 481, which should read as follows:—'(*f*) His quota coffee in the Pool has a definite value, and offers a security for borrowing. Without control, coffee would have little value, if any, if offered as security, for it might well be unsaleable, whereas a large part of the Pool coffee *must* be sold, for it contains coffee needed on the Indian market, which will be released at a reasonable price.'

* * * * * *

Another new feature in this issue is the current prices of cardamoms in the Bodinayakanur market which are kindly being supplied to us by the Cardamom Planters' Co-operative Bank Ltd. Actually these prices were quoted on a previous occasion but we have now made arrangements for them to be supplied regularly throughout the season. Our readers may like to have an explanation of the grade terms used in the market report.

Motta Green consists of cardamoms in bulk as despatched by the growers to the auction for sale. This grade is well cleaned, that is to say, all blacks, splits and lights (unripe pickings) have been picked out.

European Green.—This also is cardamoms in bulk but not well cleaned, that is to say, blacks, splits and lights have not been picked out from the bulk.

Robin Quality.—This is the best class of bold cardamoms, with all green coloured capsules sorted out from the bulk, and it contains neither whites, blacks, splits or lights. This quality is but seldom sent to the auction in this condition by the growers, but it is sorted out by the receiving merchants and large buyers so as to secure as fine a quality as possible for special markets.

All the prices are given in rupees per Thulam. A Thulam is 810 tolas weight.

* * * * * *

The Tanganyika Territory Government have decided to release five more members of the staff of the Coffee Research and Experimental Station, Lyamungu, Moshi, for military service. Thus, of the eleven European members of the staff at the outbreak of war, only Mr. S. M. Gilbert, Chief Scientific Officer, and Dr. G. B. Wallace, Plant Pathologist, are left.

It is obvious therefore that certain work cannot be carried on. It is hoped to maintain essential parts of the programme including the recording of yields on many experiments. Among the items that will be suspended is the publication of the Quarterly Notes until more normal times return.

* * * * * *

We learn that the directors of the Travancore Tea Estates Company, Ltd., have declared an interim dividend on Ordinary shares of 4 per cent (the same as last year) less tax, which was payable on and after October 1, 1940.

U. P. A. S. I. CIRCULARS

PROVINCIAL AND STATE WAR FUNDS

In the *Planters' Chronicle* issue of 26th October, full details were given of the Executive Committee's proposal to ask all Estates to contribute to their Local Government War Funds through the U.P.A.S.I. on an acreage basis.

TEA

The Committee of the Tea Product Section have decided to adopt the suggestion so far as tea estates are concerned.

All tea companies and proprietary interests in South India are now invited to make a special contribution to Provincial and State War Funds, at the rate of 2½ annas per acre of planted tea, through the U.P.A.S.I. Remittances should be sent to the Secretary, U.P.A.S.I., Coonoor, who will pass on the amounts contributed to the respective War Funds monthly. All amounts received will be acknowledged in the *Planters' Chronicle*, and the Association will bear all expenses incurred in receiving and forwarding.

Should any company or estate wish to make a contribution at a higher rate per acre than the suggested rate of 2½ annas now asked for, the Committee will be pleased to accept such additional generosity. In particular it is thought that there are rupee concerns which may like to do so, as their incidence of taxation is a good deal less than that of the Sterling Companies, whose contribution to the war effort in the United Kingdom is considerably greater.

It should also be noted that this invitation extends to all tea concerns in South India even if they are not members of this Association.

It is possible that some companies or estates have already made contributions direct to their Local Government War Funds. In such cases the donors are invited to notify the Secretary that they have done so and the amount subscribed, so that the Committee may have some idea as to the total support which the tea industry in South India has accorded to the various War Funds.

COFFEE

The position of the coffee industry is so precarious, and so many coffee estates are in such financial difficulties, the Committee of the Coffee Product Section regret that they do not feel justified in asking for a general acreage contribution from coffee producers. They realise that coffee proprietors both have and are doing their utmost to assist in the war effort as far as lies in their power in many ways, in spite of the plight that the industry is in, and confidently leave it to the individual to do all he can to help their country in its hour of need. Further the coffee acreage represented by the Association is but a quarter of the total area of this product in South India, and any effort on the part of the Association could not claim to be representative of the industry as a whole.

RUBBER

The Committee of the Rubber Product Section are still considering the Executive Committee's. proposal, and may be expected to make an announcement after their next meeting which is expected to take place before the end of this month.

Coonoor, C. H. BROCK,
15th November 1940. *Secretary.*

LONG TERM CONTRACT—TENDERS BY COMPANIES

A short time ago the Tea Controller called upon Agency Houses and Tea Companies, which had elected to tender as one group, to re-allocate their offers so as to reduce their total cost to the Ministry of Food to approximately what would have been payable if all the estates in that Agency or Company had offered 90% of their individual export allotments. As a result of representations made in London to the Ministry of Food, the Director of Tea Supplies has now notified that where tenders were made on the above mentioned basis, contractors, having accepted liability to supply 90% of the Agency total including non-contracting estates, must have the right to determine what proportion of the total is to be supplied by each estate; and that, in accordance with clause 12 of the conditions of Sale, the price payable will be the contract price of the estate making the deliveries.

It must be clearly noted that the above ruling refers only to the original tenders in respect of 90% of the export quota, but the Controller has, of course, the right to accept or reject, either in whole or in part, any supplementary tenders over and above the 90% in the original contract.

COONOOR, C. H. BROCK,
14th November 1940. *Secretary.*

INCOME TAX—DEPRECIATION ALLOWANCES ON TEA ESTATES

The Indian Tea Association has issued a circular to all its members urging that unanimity of action on the part of all tea concerns is highly desirable in connection with the depreciation of buildings on all tea estates in view of the recent amendment by Government of India Notification of Rule No. 8 of the Indian Income Tax Rules.

This amended rule classifies buildings, for the purpose of depreciation at varying rates, as follows:—

Class of buildings	*Rate: Percentage on the written down value*	*Remarks*
Buildings:—		
(1) First class substantial buildings of selected materials	2.5	Double these rates will be allowed for factory buildings excluding offices, godowns, officers' and employees' quarters.
(2) Second class buildings of less substantial construction	5	
(3) Third class buildings of construction inferior to that of second class buildings but not including temporary erections	7.5	
(4) Purely temporary erections such as wooden structures	—	No rate is prescribed: renewals will be allowed as revenue expenditure.

The General Committee of the Indian Tea Association accordingly recommend that all tea concerns should classify their buildings in the following manner for the purpose of claiming depreciation allowances:—

(1) First class.—

(a) Reinforced concrete throughout.

(b) Steel Columns. Concrete or brick panelled walls. Reinforced concrete floors and roof.

(2) Second class.—

(*a*) Steel Frame (i.e. steel columns and roof trusses). Concrete or brick walls. G.C.I. roof.

(*b*) Steel Frame. G.C.I. walls. G.C.I. roof.

(*c*) Steel Columns. Timber roof trusses. Brick or concrete walls. G.C.I. roof.

(*d*) Steel Columns. Timber roof trusses. G.C.I. walls. G.C.I. roof.

(3) Third class.—

(*a*) Steel Frame. Lath and Plaster walls. G.C.I. roof.

(*b*) Steel Columns. Timber roof trusses. Lath and Plaster walls. G.C.I. roof.

(*c*) Steel Frame. Thatch roof. Brick or concrete walls.

(*d*) Steel Columns. Timber trusses. Thatch roof. Brick or concrete walls.

(*e*) Steel Columns. Timber trusses. Thatch roof. Lath and Plaster walls.

(*f*) Timber Frame. G.C.I. roof. Brick walls.

(*g*) Timber Frame. G.C.I. roof. Lath and Plaster walls.

(*h*) Timber Frame. Thatch roof. Brick walls.

(*i*) Timber Frame. Thatch roof. Lath and Plaster walls.

Renewals and replacements of lath and plaster walls and thatch should be treated as being ordinary revenue expenditure.

For the purpose of Rule 8 the following buildings should be classified as 'factory buildings':—

(1) Tea Houses. (2) Withering Houses (only when classifiable as 'factory buildings' for the purposes of the Factories Act). (3) Fermenting Houses. (4) Battery Houses. (5) Pump Houses. (6) Boiler and Engine Houses.

COONOOR, C. H. BROCK,
15th November 1940. *Secretary.*

U. S. RUBBER PURCHASES

Representations have been made by the London Rubber Trade Association to Sir John Hay, who is at present in the United States, urging a buying representative in London for the American Rubber Reserve Company.

In his reply, Sir John Hay says that he was informed that it was the intention and desire of the Rubber Reserve Company to utilise all markets including London. It was the opinion of the buying committee that the appointment of a buying agent in London would be a mistake since it would tend unnecessarily to fetter business with London, which, it was desired, should continue to operate as heretofore by offering rubber through the usual channels.

With regard to bulk purchases made by the Reserve Company of which the R.T.A. had no knowledge, Sir John said that the operation was initiated by the Indo-China Government and disclosed that a further offer of 8,000 tons had been received from the same source. These must, he says, be regarded as products of abnormal conditions existing in that territory and not likely to be widespread.

Apart from such isolated items, Sir John reiterated, it was the full intention of the A.R.R.C. to continue to purchase in all markets as heretofore through the usual trade channels.

—*T. & R. Mail.*

S. I. P. BENEVOLENT FUND SPECIAL APPEAL

The following is a statement, grouped under Districts, of donations to the Fund promised or paid up to 19th November 1940 in response to the Special Appeal issued by the President of the U.P.A.S.I. on 24th June 1940.

		Rs.	A.	P.	Rs.	A.	P.
Anamallais ...	Individuals	740	8	0			
	Estates and Companies ...	700	0	0			
					1,440	8	0
Central Travancore ...	Individuals	335	0	0			
	Estates and Companies ...	1,217	6	0			
					1,552	6	0
Coorg ...	Individuals	370	0	0			
	Estates and Companies ...	100	0	0			
					470	0	0
Kanan Devans ...	Individuals only	1,129	10	0			
					1,129	10	0
Malabar ...	Estates and Companies only ...	200	0	0			
					200	0	0
Mundakayam ...	Individuals	150	0	0			
	Estates and Companies ...	158	7	8			
					308	7	8
Mysore ...	Individuals	2,245	0	0			
	Estates and Companies ...	950	0	0			
					3,195	0	0
Nelliampathies ...	Individuals	40	0	0			
	Estates and Companies ...	100	0	0			
					140	0	0
Nilgiris ...	Individuals	726	8	0			
	Estates and Companies ...	1,549	2	0			
					2,275	10	0
Nilgiri-Wynaad ...	Individuals	485	0	0			
	Estates and Companies ...	50	0	0			
					535	0	0
Shevaroys ...	—	—			—		
South Travancore ...	Individuals	305	0	0			
	Estates and Companies ...	300	0	0			
					605	0	0
Wynaad ...	Individuals	280	0	0			
	Estates and Companies ...	100	0	0			
					380	0	0
U.P.A.S.I. Staff and Firm Members		540	0	0			
					540	0	0
	Total				12,771	9	8

	Rs.	A.	P.
Already acknowledged ...	11,645	13	8
E. A. Stone	15	0	0
C. K. Pittock	250	0	0
J. S. Wilkie	100	0	0
F. C. Patmore	25	0	0
Semni Valley Estate ...	56	10	0
W. L. Roberts	20	0	0

	Rs.	A.	P.
Puthutotam E. Co. Ltd. ...	250	0	0
Korangumudi E. Co. Ltd. ...	250	0	0
Katary (Nilgiri) T. E. Ltd.	149	2	0
'A Good Loser' ...	10	0	0
Total ...	12,771	9	8

PROFESSION TAX PAYABLE BY COMPANIES

The following amendments to Rules regarding profession tax payable by companies transacting business in more than one local area have been published in the *Fort St. George Gazette*, under G.O. No. 3665, L.A. dated October 18, 1940:—

Notification No. 1206.—In exercise of the powers conferred by sub-section (1) of section 305 of the Madras District Municipalities Act, 1920 (Madras Act V of 1920), His Excellency the Governor of Madras is hereby pleased to make the following rule altering Schedule IV to the said Act:—

In the said schedule—

(i) after rule 19, the following rule shall be inserted, namely:—

'19-A. (1) Notwithstanding anything contained in sub-rule (2) of rule 18 and rule 19 or in sub-rule (2) of rule 11 and rule 11-A of Schedule IV to the Madras Local Boards Act, 1920, a company which transacts business within the limits of two or more local authorities other than cantonment authorities in the Province of Madras excluding the City of Madras and which is assessed to income-tax, may in respect of any half-year, offer within 15 days from the earliest date on which a notice under section 95 or under section 96 of the Madras Local Boards Act, 1920, is served on it by a local authority in respect of the half-year, to pay in lieu of the profession tax payable by it for that half-year to the said local authorities, the tax leviable at the highest of the rates, levied within the limits of the local authorities concerned, calculated on the company's total income in the Province of Madras and cantonments in the half-year, in accordance with clause (a) of sub-rule (1) of rule 18 or in accordance with clause (a) of sub-rule (1) of rule 11 of Schedule IV to the Madras Local Boards Act, 1920, and request the Inspector of Municipal Councils and Local Boards to apportion the tax among the local authorities and shall intimate the fact of its having done so to the said local authorities.

(2) When a company makes such an offer, it shall not, pending the apportionment of the tax by the Inspector of Municipal Councils and Local Boards, be open to any of the said local authorities to assess the company to profession tax or to demand the tax for the half-year to which the offer relates, except in accordance with the provisions of sub-rule (5).

(3) On receipt of the offer from a company under sub-rule (1), the Inspector of Municipal Councils and Local Boards shall apportion the tax mentioned in that sub-rule among the local authorities concerned.

(4) The company shall furnish the Inspector with such details as he may require in connection with such apportionment. If it fails to do so within a reasonable period, it shall be open to the Inspector to decline to apportion the tax whereupon the provisions of this rule shall cease to apply to the offer of the company.

(5) On the apportionment of the tax mentioned in sub-rule (1), the local authorities concerned shall assess the company to profession tax, fixing the assessment at the amount apportioned to them by the Inspector and shall not demand a greater amount from the company as profession tax for the half year.

(6) Notwithstanding anything contained in sub-rule (3) of rule 29, or in sub-rule (3) of rule 32 of Schedule IV to the Madras Local Boards Act, 1920, the notice under section 95 or under section 96 of the Madras Local Boards Act, 1920, may, in the case of a company assessed under sub-rule (5), be served upon it either in the half-year in which the apportionment mentioned in sub-rule (3) is made, or in the succeeding half-year.

(ii) after the proviso to rule 28, the following proviso shall be inserted, namely:—

'Provided further that were a company is liable to be assessed to profession tax under sub-rule (5) of rule 19-A or under sub-rule (5) of rule 11-B of Schedule IV to the Madras Local Boards Act, 1920, for any half-year, nothing in this rule shall be deemed to prohibit the alteration of the assessment made previously, if any, for that half-year so as to bring it into accordance with the provisions of that sub-rule.'

A similar order in exercise of the powers conferred by sub-section (1) of section 201 of the Madras Local Boards Act, 1920, has been published as Notification No. 1207 (G.O. No. 3666 L.A.) Local Administration Department.

INDIAN COFFEE MARKET EXPANSION BOARD

The following are extracts from the Report of the Director of Indian Coffee Propaganda for the quarter ending 30th June 1940.

D.I.C.P.'s Tours.—The D.I.C.P. visited Cambridge, Reading and Oxford. His visit to Cambridge coincided with a demonstration of Indian coffee held at Messrs. Matthews & Son Ltd., and calls were made to renew our acquaintance with firms who had co-operated with the Board in the past. Reading and Oxford were visited for the first time, when calls were made on firms with whom the Board had been in contact by correspondence.

One useful new contact was made with a grocery business having several branches and a good coffee trade, who have, as a result, recently obtained a supply of Indian coffee which they are offering as a straight-drinking coffee to the public. An interesting firm of tea and coffee specialists, who have during the past two years turned over a considerable quantity of Indian coffee, have made plans to start a mail order business featuring a pure Indian blend. At Oxford a new contact was made with a very high class grocery business. The managing director of this firm called at India House to discuss the possibilities of increasing the sales of coffee. Since his visit he has laid in a stock of Indian coffee which will be offered for sale at Oxford and at branches under his control in Bedford and Hitchen.

Demonstrations in Shops.—A demonstration was held at Messrs. Matthews & Son Ltd., Cambridge, for two weeks from 20th May to 1st June, 1940. The customers of this store were notified in advance of the demonstration, and delivery vans displayed our new Indian Head & Bowl of Beans poster for two weeks prior to the commencement of the demonstration. The proprietor of this high-class store expressed satisfaction with the increase of sales during the period of the demonstration, and was of the opinion that the future results would prove to be even more satisfactory.

An Indian coffee demonstration week was staged at Messrs. Harrods Ltd., Knightsbridge, S.W.1, from the 24th to 29th June, 1940. Everything possible was done by the manager of the grocery department of this large London store to make the demonstration of Indian coffee a success, and in the centre of this department an excellent site was put at our disposal. The interest aroused was considerable, and in addition to a fair sale of coffee during the period of the demonstration, some useful standing orders were placed for weekly supplies.

Government of India Exhibition Shop.—An exhibition of Indian products was organised by the Indian Trade Publicity Officer at 46 Bold-Street, Liverpool, from 8th to 25th June 1940, and a prominent section was devoted to the display of Pure Indian coffee. In this connection the co-operation of Messrs. Cooper & Co.'s Stores Ltd., one of the largest retail firms in the City, was secured. On one counter a range of the chief types of Indian coffee, both roasted and in the raw, were displayed against a background of Indian coffee advertising material supplied by the Indian Coffee Market Expansion Board. In one of the shop windows Indian products used in war time were shown to illustrate 'India's contribution to the War effort', and included Indian coffee as being one of the foodstuffs supplied by India. A similar window display of Indian products used in war time was organised simultaneously in the windows of Messrs. Cooper & Co.'s Stores Ltd. The Government of India display of Indian coffee attracted considerable attention. Samples of Indian coffee, freshly roasted each morning, were sold at the counter in ¼-lb. packets, and the purchasers were given the names of retailers in the town where future supplies of Pure Indian coffee could be obtained. Two hundred and fourteen packets were sold at the counter.

Canteens.—Indian coffee was introduced and demonstrated at nine canteens for the Services during this quarter. The introduction of Indian coffee to canteens in this country may be developed to large proportions, for a scheme has been formulated and will shortly be put into operation to organise the serving of a Pure Indian coffee at Works' canteens throughout the country, and this may result in opening up a market for the less fine Indian coffees.

Consumption of Indian Coffee in the U.K.—It should be recorded that the consumption of Indian coffee in the United Kingdom for the first nine months of 1939 amounted to 1,929 tons; a figure which exceeds that of any complete calendar year since 1923, and may be taken as a concrete example of the result of the Board's publicity work in this country, and of the growing popularity of Indian coffee. In view of the fact that the issue of all official statistics has been suspended since September 1939, it is no longer possible to furnish details of imports, re-exports and deliveries. It is understood, however, that the consumption of Indian coffee for the twelve months of 1939 is highly satisfactory, but was possibly accentuated by the buying wave which took place on the outbreak of war.

The conditions pertaining in Mincing Lane during 1939 were abnormal, for, besides the usual imports of Kenya, Indian and Costa Rica coffee, unusually large supplies of Tanganyika, Uganda and Bugishu coffee were shipped to London. At the beginning of the season it was anticipated that the offerings of Costa Rica coffee would be small, and this resulted in good prices being paid for Kenya coffee. Unfortunately, by the time the Indian crop arrived it had become clear that large supplies of Costa Rica would be received. This had the effect of depressing the market, and Home Trade buyers had it all their own way due to the European war having brought the re-export business to a standstill. It is not yet clear whether the United Kingdom Government will allow foreign coffees to enter this market next season. Import licences on all coffee entering the U.K. have been imposed, and we are led to suppose that licences for the import of Indian coffee will be granted freely. The loss of the French Market brought about by the capitulation of France will make it difficult for India to find customers for her exportable surplus.

In recent years Turkey, Greece and Egypt have imported the bulk of their coffee supplies from Brazil, and so long as they are able to obtain supplies of Brazilian coffee there is little prospect of finding a market for Indian coffee in these countries, unless at an extraordinarily low price.

The Fortnightly Review of the Bank of London and South America, dated the 27th of July, 1940, shows that during the first four months of 1940, imports of Brazilian coffee into Turkey and Egypt have exceeded those of the same months for the previous year. If the position should arise that supplies of Brazilian coffee are cut off, every endeavour should be made for India to obtain a footing in these countries, but the position is not likely to be as favourable as during the last war for severe competition may be expected from East Africa, not to mention the Dutch East Indies.

Press Publicity.—Little Press publicity was undertaken during the quarter, two isolated half-pages being inserted in *The Caterer & Hotel Keeper* and *The Hotel Review*. As a result of these advertisements contact was made with the Works' canteen of an Aero factory in the Midlands. Articles dealing with a description of the work of the Board at National canteens appeared in trade papers.

The Royal Society of Arts.—On the 3rd of May, the D.I.C.P. read a paper on The Coffee Industry in India before The Royal Society of Arts. The paper was re-printed in book form and copies have been circulated to interested parties in the trade, and by request to educational bodies.

Display Material and Distribution.—One hundred new permanent display units which were produced during the last quarter are now going into circulation. This brings the Board's total number of window display sets up to three hundred. The first unit produced by the Board, consisting of a centrepiece Map of India and side panels of pictures, is still in circulation and as popular as ever for use in small windows. It is the policy of the Board, when new contacts are made, to first of all offer this Map unit, to be followed later by the large Plantation Screen, and finally the new 'International' set, so-named on account of the Map of India being surrounded by cutout figures of people representing various coffee-drinking countries, all expressing happy appreciation of the beverage; the whole unit measuring 3′ x 2½′—a popular size and subject. Meanwhile this new unit is being distributed to firms who have already made good use of both the Map and Plantation units on several occasions.

TUNG OIL

The supply of tung oil has been so profoundly affected by the war in China that considerable interest is attached to a report by Dr. M. Ashby upon his tour of the area in the United States in which the tung tree is now being cultivated. It is estimated that some 175,000 acres in the States bordering on the Gulf of Mexico now carry plantations of this tree, but many earlier plantations were on land that has since proved unsuitable, the great difficulty proving to be frost damage. The species cultivated is almost exclusively *Aleurites fordii* Hemsl.

Details are given of cultivation, harvesting and mill treatment of the crop, etc., and it is clear that a very high-grade quality of oil can thus be obtained, but until 1938 the yield had been uncertain owing to frost damage. Although three million pounds of tung oil were produced in the States in 1938 (against an import of 108 millions in that year), until now the paint and varnish industry practically bases itself upon the Chinese supply, though the war has made this a very uncertain source.

—*Nature.*

CARDAMOM PRICES AT BODINAYAKANUR

The following prices are quoted by the Cardamom Planters' Co-operative Bank Ltd., as current on the 8th November 1940:—

	per Thulam of 810 tolas weight							
European Green No. 1	... Rs.	35	0	0	to Rs.	40	0	0
Do. No. 2	... ,,	30	2	0	,, ,,	34	10	0
Motta Green ...	... ,,	40	8	0	,, ,,	44	10	0
Robin Quality ...	... ,,	47	0	0	,, ,,	48	4	0

CEYLON TEA COUPONS

On 18th November, Mr. A. E. Goonesinha put forward a motion in the Ceylon State Council asking the Governor to proclaim the Tea Coupon Control Regulations in view of the Acting Minister's (Mr. B. M. Aluwihare) 'refusal' to introduce a draft Bill.

The mover claimed that big businesses trafficking in coupons had resulted in factories having to be closed down with the result there was a tremendous amount of unemployment. What he desired was the fixing of a maximum price for tea coupons, as in Malaya and elsewhere. At present big businesses made capital out of these speculations, crippling small holders. A supporter of the motion alleged that there had been a leakage of news of the 5% cut which had enabled big businessmen to make speculative purchases. Another urged that an appeal be made to the International Committee for an increase in the assessment allocated to Ceylon as a remedial measure, as the huge excess of production in Ceylon could not be consumed locally.

Mr. E. C. Villiers pointed out that there was definite shortage of coupons and, because of favourable climatic conditions this year throughout the country, more tea had been produced than is permitted under the quota system. This naturally led to a gamble in coupons. A 2½% extra release would cover all the excess tea and reduce all their troubles.

The Acting Minister said the motion was practically a vote of censure on himself. He showed, from graphs, that coupon prices closely followed those of tea, and there had been a collapse in tea prices from the second week in June till 9th July. That coincided with the time that Hitler broke through the Maginot Line and, with swoop after swoop, swallowed up France. The loss of the French market caused a panic with everyone, including the International Tea Committee. Coupons were dumped on the market and those with more faith in the Empire recovering from this blow bought them up. The permanent Minister had cabled the Secretary of State asking for a 5% release, but had only got 2½%. On 8th November he had asked the Governor to cable again for 5% release and was awaiting a reply. If the International Tea Committee could not give them more coupons, as an alternative, action under Section 34 of the Tea Control Ordinance could be taken, but he hoped that it might not be necessary.

The *Times of Ceylon* in commenting on the position points out that at the end of October there was a balance of 90,318,931 coupon lbs. for the last five months of the export year. During the corresponding period last year the actual exports amounted to 90,876,670 lbs., and if exports were limited to this amount from now on, the supply of coupons available would be very nearly adequate. But the recent increase of production may continue, and there might very well prove to be an unexportable surplus of nearly 23 million pounds. Whether the passage of the proposed new Tea Coupon Bill will set the coupon market to rights cannot be predicted even if the reduction in price of coupons is speedily achieved, and it would appear that the only real solution to their difficulties would be an extra 5% export release. The fault lies in the inflexibility of the tea control scheme. It is permitted to carry forward export licences, when the allowance has not been reached, but there is no provision for exporting in excess of the allowance when production has been unavoidably heavy, the surplus to be deducted from the following year's exportable allowance. The Rubber Control Scheme has this safety valve. The hope is expressed 'that something will be done to enable Ceylon to export her excess production to the fullest extent of the shipping space available. The people of Britain are clamouring for tea, and there is always the possibility that the war will take a turn that will leave large supplies of tea in the producing areas unshippable and useless'.

'BLISTER DISEASE' OF CARDAMOMS

The Mysore Department of Agriculture has just issued in Bulletin No. 22 of the Mysore Coffee Experiment Station a preliminary account of the 'Blister Disease' of Cardamoms written by Mr. V. K. Subramaniam, B.Sc., the Assistant Coffee Scientific Officer of the U.P.A.S.I. The following is a summary of the Bulletin which contains plates contrasting healthy fruit with diseased fruits, illustrations of the life-history of the Cardamom Thrips, the effect of the disease on sections of the stalk and the flowering spikes, and a photograph showing the field infection experiment:—

The disease of cardamoms known as 'Kaggi Kai' in Mysore, is caused by a species of thrips. The pest is wide-spread and exists in almost all cardamom areas. The severity of attack may vary widely in the same estate and normal spread does not seem to be rapid. The insects can be found at all times under the leaf sheaths of the cardamom plant. Almost all parts of the plant can suffer injury but the major damage is to the flower buds and young fruit. The injury to the buds results in the failure of large numbers to set fruit. The fruit injury spoils the appearance of the capsule but does not appear to affect the number of seeds or their character.

The injuries are caused by the feeding habits of the insect and the blistering noted on the fruit represents the attempt at repair made by the plant.

The structural peculiarities of the cardamom are eminently suited to the habits of the insect, which lives always under protection of leaf sheaths or other shelters.

The life-history extends over about 30 days from egg to adult and each female lays 30-40 eggs. There may be, therefore, 12 generations a year. The insect undergoes four moults.

There is marked seasonal fluctuation in the numbers of the insect, which are always more abundant in the dry season. A prolonged dry season would tend to increase the severity of the attack. At Balehonnur, the numbers of the insect appear to reach a maximum just before the rains.

The trailing variety (Malabar cardamom) appears to suffer less than the upright (Mysore cardamom).

Spraying seems to offer no possibility of successful control. Experiments with sulphur dusting in the dry weather appear to be more promising and it is possible that Nicotine dusts might be similarly used. Estate sanitation will play an important part in any control measures; all cardamom debris should be carefully destroyed either by burning or burying.

Movement of cardamom plant material should be avoided as far as possible.

U. P. A. S. I. TEA SCIENTIFIC SECTION

It is considered that many of the queries received by the Tea Scientific Section, and the answers to such queries, would be of general interest. It is therefore proposed to include a selection of these enquiries in issues of the *Planters' Chronicle*. The selection will usually be made from recent enquiries, but some enquiries dating further back will be included from time to time. For convenience and conciseness the exact wording in letters received, and replies given, will not always be adhered to, though the general sense and purpose will be maintained. In some cases extracts only are included. The district from which each enquiry was received will be mentioned.

J. D. MANNING,
Tea Scientific Officer.

ENQUIRIES AND REPLIES OF GENERAL INTEREST

Question 1. MITE DAMAGE TO TEA. I am sending you for examination and report some tea leaves which have a bronze appearance round the edges. Bushes all over the estate have this appearance.

Answer.—The leaves show evidence of attack by mites. No mites were found on the specimens sent, but the large number of cast skins present are suggestive of Purple mite (*Eriophyes carinatus*). Mite injury usually occurs during dry weather when weather conditions adversely affect the bushes. Badly infested leaves assume a bronze colour, and in times of drought this mite often causes defoliation. The attack should disappear during the N.E. monsoon. If rains are insufficient and the attack persists, sulphur dusting is the recommended treatment. Two applications of dust with an interval of one week. If no dusting machine is available a simple method of dusting is to use small bags made out of any coarse cloth. No leaf should be plucked from dusted bushes for two weeks after application. (Nilgiris. No S.W. monsoon area.)

Question 2. BORERS IN GREVILLEA. A number of silver oaks are dying out, and most of them have a borer in the stems. Other silver oaks that are dying have rotted roots. Specimens are sent.

Answer.—The borers found in the specimens are identified as Xyleborus semigranosus and X. perforans. These insects generally bore in moist wood, and are most unlikely to attack healthy trees growing under normal conditions. Infestation is very probably due to prediseased condition of the trees as a result of other causes. The root rotting mentioned (no specimens of this received) is, presumably, the main cause. Control measures against the borers is not considered necessary. Grevilleas with root disease should be taken out. (Anamallais.)

Question 3. TEA SEEDLINGS ATTACKED BY CUT WORMS. We have experienced considerable damage to young basket plants (tea) by caterpillar and are now sending you samples for identification. It appears that plants protected by shade baskets suffer the most. The caterpillar bores out the earth round the roots, causing at times complete exposure and consequent death of the plant.

Answer.—The caterpillars received are commonly known as Cut worms. The damage to plants protected by shade baskets is probably due to the shelter which these baskets give to the insect during the day. The soil round the plants should be scraped to a few inches to find the pupæ which should be collected and destroyed. Poison baits may be used to attract and destroy the insects in the caterpillar stage. A note on this method is enclosed. (Nilgiris.)

Question 4. CAUSTIC WASHES FOR TEA. Please let me know what you consider the most suitable caustic soda wash for the frames of tea bushes at time of pruning. I find a 3% solution is far too weak on very hide-bound frames and a 5% solution has much more effect without doing any damage to the wood.

Answer.—Our experience is that caustic soda washes stronger than 2% are very liable to be harmful; and on tender wood 2% can be harmful—a recent case of this being seen. 2% should be strong enough to kill any moss or lichen. Your experience of a 5% solution being more effective than a 3% solution, and not causing any damage is interesting, and your experience here should be your guide. As cases of damage by strong solutions are known, we cannot recommend as a general prescription any strength above 2%. (Central Travancore.)

Question 5. pH VALUE OF NURSERY SOILS. I am sending you six soil samples taken from different areas. It is proposed to use the soils for nurseries. I shall be glad if you will let me know if the samples are sufficiently acid.

Answer.—The pH values of the six samples are as follows:—

No. 1	7.15
No. 2	8.07
No. 3	6.39
No. 4	7.12
No. 5	7.43
No. 6	6.55

Nos. 1, 2, 4 and 5 are definitely alkaline soils, and as such we cannot recommend that they be used for nurseries. Nos. 3 and 6 are sufficiently acid and from this point of view should be quite suitable. (Nilgiri-Wynaad.)

U. P. A. S. I. LABOUR DEPARTMENT LABOUR BYE-LAWS

NOTICES

Recently the proposed and amended Labour Department Labour Bye-Laws were circulated to all Subscribers for their information. These Bye-Laws will duly be discussed at the Labour Department General Meeting probably in March 1941. Meanwhile the Control Committee would welcome comments from Subscribers on these Bye-Laws in order that due consideration may be given to them before they are discussed at the General Meeting.

By order of the Control Committee,
A. H. MACKIE,
Director, Labour Department, U.P.A.S.I.

SIVAKASI AGENT, MR. R. GOPALAKRISHNAN

The services of Mr. R. Gopalakrishnan have been dispensed with from 30th November 1940, and the Sivakasi Agency will be in charge of Mr. K. S. Venkatarama Iyer.

The Headquarters of the Alangulam Agent Mr. V. Thirumalaiswami Iyengar has been transferred to Ambasamudram. The Agency will in future be known as Ambasamudram Agency.

A. H. MACKIE,
Director, Labour Department.

MARKETING OF COFFEE IN INDIA

The Report of the Agricultural Marketing Adviser to the Government of India on the marketing of Coffee in India and Burma has recently been issued. It is a comprehensive volume of 355 pages, and can be procured from the Government of India Press, New Delhi, for Re. 1-4 including postage. When ordering the symbol number should be quoted, namely, AMA. 18.

We have not yet had time to digest this publication. It is divided into ten main chapters, each of which is summed up in 'Inter-chapters'. The 80 pages of Appendices are mostly statistics. The following are items from a summary of the Report issued by the Government of India Principal Information Officer:—

It is acknowledged that India produces some of the best coffees in the world, yet while coffee valued at about Rs. 100,00,00,000 enters the world market every year, India's share is only about Rs. 1,00,00,000, states the Agricultural Marketing Adviser's report on the Marketing of Coffee in India and Burma.

The report urges the need for the improvement and systematization of existing methods of classification and grading of coffee, and says that a uniform system of standards prescribed under the Agricultural Produce (Grading and Marking) Act of 1937 and strict supervision and control of the operation of the rules enforcing the grade standards would stimulate the demand both at home and abroad. Steps have been taken to encourage the sale of Indian coffee in the United Kingdom, but a more active policy to promote sales in other countries is required.

Imports.—Under the provisions of the Destructive Insects and Pests Act, the Government of India prohibited the import of coffee plants, seeds and beans into India and Burma in 1931, and this order still stands. Excluding shipments of raw beans from Burma, imports since 1931 have been confined to ground coffee and coffee extracts, of which 75 per cent come from the United States of America. Imports of tinned coffee have doubled in the course of the last three years owing to the drop in prices in the United States of America. About 10,000 cwt. of chicory valued at about Rs. 1,30,000 are imported into India every year. Before the war the bulk of this import came from Holland and Belgium.

India exports every year about 32 per cent of her coffee, valued at about Rs. 1,00,00,000. Exports declined by about 30 per cent after 1805-06 and touched bottom in the five-year period ending 1934-35. They improved however, in 1935-36 and 1936-37, but again dropped and reached the lowest level in 1937-38.

Exports.—The United Kingdom and—before the war—France have been India's best customers, absorbing more than 50 per cent of Indian shipments between them. India's leading position as an exporter of quality coffees was almost unchallenged before the war of 1914-18, but since then there has been keen competition from Costa Rica, British East Africa and Colombia.

Exports to Empire countries declined by about 58 per cent within the last 30 years, while during the same period exports to foreign countries rose by about 5 per cent. From about 56 per cent of the total exports, the Commonwealth's share fell to about 34 per cent in the quinquennium ending 1934-35, and in 1936-37 it reached the lowest figure of

28 per cent. The share of exports to foreign countries increased from 44 per cent to about 66 per cent in the five-year period ending 1934-35.

The United States of America is the foremost importer of coffee, taking nearly 50 per cent of world imports, and during the last 25 years this country's imports of coffee have nearly doubled. Indian exports to the United States of America are negligible.

One of the biggest consumers of Indian coffee is France, but Indian shipments form only 1.4 per cent of the total.

Consumption in India.—The *per capita* consumption in India (excluding Burma) for 1936-37 is estimated at 0.136 lb.

It is a point of considerable significance to the industry, says the report, that in spite of the fact that she produces some of the best quality coffees in the world, India's consumption ranks so low as compared with other countries. The Indian Coffee Cess Committee constituted in 1935, has, however, made a beginning with market propaganda to tap the potential internal demand.

About 96 per cent of the coffee available for consumption in India is consumed within Madras, Coorg, Mysore, Travancore and Cochin, the rest of the country consuming only 4 per cent. The internal demand has risen from five cups per head per annum in 1932-33 to seven cups in 1936-37. If the rate of consumption could be increased by even 0.15 lb. per head, all the coffee produced in India would easily be absorbed in this country.

INTERNATIONAL TEA COMMITTEE

The following are extracts from the Report of the International Tea Committee for the seventh year of regulation, being the second year of the second period, namely 1st April, 1939 to 31st March, 1940:—

It was stated in the last Report that the British East African Dependencies of Nyasaland, Kenya, Tanganyika and Uganda had agreed to participate in the Regulation Scheme for the second period of regulation, 1938-43, and had undertaken, not only the limitation of extensions of their planted area, but also the regulation of exports in accordance with the percentages fixed annually by the Committee. The legislation necessary to implement these undertakings has now been passed by the Nyasaland Protectorate and the Tanganyika Territory. The Colony and Protectorate of Kenya and the Uganda Protectorate passed legislation providing for the limitation of their planted areas, but omitted to provide therein for the regulation of exports; this omission has been brought to the notice of the Colonial Office so that the necessary representations may be made.

At their meeting at the beginning of March 1939, the Committee decided that the quota for the ensuing year, 1st April, 1939 to 31st March, 1940, should be 90 per cent of the standard exports, being a reduction of 2½ per cent on the figure for the preceding year. On the outbreak of war, the tea trade in the United Kingdom was taken over by the Government, which made arrangements to purchase substantial quantities from the producers in India, Ceylon and British East Africa to provide for civilian consumption in the United Kingdom and the requirements of the Forces. To allow for this and for the possibility of quantities of tea being lost at sea as the result of enemy action, the Committee decided, on 5th October, 1939, to raise the quota for the year to 95 per cent. Owing, however, to shipping difficulties, the carry-over of unused export rights at the end of the year was substantially greater than at the end of the previous year, so that the increase in export was actually only about 8 million lb. The balance, of course, remained exportable up to 31st May, 1940, in addition to the following year's quota.

As will be readily understood, the determination of the quota for 1940-41 presented more than ordinary difficulty, but in view of the contracts made by the Ministry of Food for the purchase of tea from Empire producers, the Committee decided to maintain the quota for this year at 95 per cent of the standard exports.

Towards the end of the year under review, representations were made to the Committee on behalf of tea producers in Southern India and in the Netherlands East Indies to the effect that, owing to a possible shortage of shipping aggravated by other difficulties, it might prove impossible to export the balance of the 1939-40 quota remaining at 31st March, 1940, before 31st May, 1940, when the export licences would cease to be valid, thus causing serious hardship to the producers involved. To overcome this difficulty, the Committee decided to recommend the respective Governments to adopt the procedure that teas licensed for export under the 1939-40 quota which had been placed under Customs control up to midnight on 31st May, 1940, should be allowed to go forward after that date as part of the quota for 1939-40. This recommendation, which applied only to the year in question, was duly accepted by the Governments of India, Ceylon and the Netherlands East Indies, and the British East African Governments were officially asked to take similar action.

The question of the smuggling of unlicensed tea out of India through the state of Cutch was referred to in the last Annual Report. To check this smuggling, the Government of India issued a notification dated 11th June, 1939, restricting the exports of tea, from British India to Cutch, to consignments covered by a permit granted by the Indian Tea Licensing Committee, these permits being restricted to a total quantity of 300,000 lb. per annum, allocated in monthly amounts of 25,000 lb. As, however, more than this amount had been exported in 1938-39 before the date of the notification, further exports to Cutch during that year were prohibited; the quota system therefore became operative as from 1st April, 1939. The Committee have had no information of any subsequent smuggling through this channel. A similar restriction on the tea exported from British India to the French Settlements of Pondicherry and Karikal was imposed as from 1st February, 1939, the monthly quantity permitted to be exported to each of the two Settlements being 1,600 lb. The latest reports indicate that the action taken by the Customs Authorities has put a stop to all illicit trading.

The publication of the Committee's Monthly Bulletin of Statistics has been continued during the year under review, but the enforced omission of figures relating to the United Kingdom and a number of other countries, consequent upon the suppression of these statistics as a result of the war, has unfortunately seriously affected its completeness. A second edition of the Annual Supplement to the Bulletin, giving important figures not included in the Monthly Bulletin was issued in May, 1939. (The third edition has also been issued, after the end of the year under review.) The booklet 'Import Duties and Other Taxes on Tea' has been kept up to date so far as available information permitted.

SOUTHERN INDIA PLANTERS' BENEVOLENT FUND

Income and Expenditure Statement for the period 1st April to 30th September 1940.

EXPENDITURE	Rs. A. P.	Rs. A. P.	INCOME	Rs. A. P.	Rs. A. P.
To Assistance Granted.—			*By Subscriptions and Donations.*—		
Case No.			Anamallais ...	240 0 0	
1. Allowance to widow ...	450 0 0		Central Travancore ...	955 0 0	
2. Allowance to widow ...	450 0 0		Coorg ...	600 0 0	
3. Allowance to widow ...	300 0 0		Kanan Devans ...	120 0 0	
4. Allowance to widow ...	150 0 0		Mundakayam ...	375 0 0	
5. Allowance to widow ...	360 0 0		Mysore ...	460 0 0	
6. Allowance to widow ...	240 0 0		Nelliampathies ...	30 0 0	
7. Allowance to widow ...	240 0 0		Malabar ...	30 0 0	
8. Destitute Planter ...	525 0 0		Nilgiris ...	190 0 0	
9. Destitute Planter ...	150 0 0		Nilgiri-Wynaad ...	120 0 0	
10. Destitute Planter ...	300 0 0		South Travancore ...	75 0 0	
11. Home allowance to widow	502 11 9		Wynaad ...	645 0 0	
12. Home allowance to widow	281 2 10		U.P.A.S.I. Staff ...	70 0 0	
13. Destitute Planter ...	200 0 0		Firms ...	150 0 0	
14. Allowance to widow ...	50 0 0				4,060 0 0
15. Home education, one girl	408 9 9		Interest received		880 3 2
16. Education, two children	250 0 0		Interest accrued		2,600 0 0
17. Home allowance to Destitute Planter ...	200 0 0				
18. Destitute Planter ...	300 0 0				
		5,357 8 4			
Current Expenses—		79 14 0			
Excess of income over expenditure ...		2,102 12 10			
		7,540 3 2			7,540 3 2

COONOOR,
5th November 1940.

C. H. BROCK,
Secretary.

MARKET REPORT AND PRICES

Calcutta (*Issued by the Calcutta Tea Brokers' Association*).

Sales Nos. 19 and 20 were held on 4th, 5th, 11th and 12th November, 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 19	Sale No. 20	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	13 5	13 3	12 5	12 4	9 2
For Internal Consumption:—					
Leaf Teas ...	4 1	3 9	3 11	5 0	4 1
Dusts ...	4 11	4 8	4 10	4 3	4 3
Green Teas ...	6 5	6 2	6 6	6 7	6 2

RUBBER—London Rubber on November 18, 11⅞*d.*

Colombo (*Issued by the Colombo Brokers' Association*).

Average prices obtained (in cents.)

SOUTH INDIAN TEA SALES	Nov. 5 & 12, 1940
Singara	94

RUBBER SALES	Nov. 7, 1940
Ribbed Smoked Sheet ...	57½
Contract Crepe	57 to 57¼
Mottled Brown Latex Crepe	53 to 55
Brown Scrap Crepe ...	50¾

Madras (*As on 21st November* 1940. *Issued by Messrs. Paterson & Co.*).

In spite of the prospect of unsettled political conditions in this market and an increase in taxes on income by 25%, market conditions throughout the fortnight have ruled very firm. This is particularly the case in Government securities/in which both taxable and tax free loans record further gains. The undertone in this section is very strong and business is difficult to negotiate in the absence of available scrip. In the share market proper, renewed activity has been seen in intermarket leaders particularly Indian Irons which have risen at the close to Rs. 31 and Bengal Steels to Rs. 18. The local market has also experienced greater activity particularly in the textile group.

RUBBER

The price of Spot Rubber in London continues to fluctuate a little under 1*s.* per lb. In India the feature of interest has been a further decline in the price of export quotas and a corresponding rise in the price of rubber without quotas. Our last advices report approximate prices for rubber at 49 cents per lb. with 4½ cents for the quota. A good enquiry was in evidence for Cochin Malabars at Rs. 6-2 and a considerable turnover was possible in this scrip. Thirumbadis also attracted greater attention business going through at Re. 1-10. Tropical Plantations were higher at Rs. 17-4 while Malankaras had buyers at the close at Rs. 31. Kalpettas were unchanged at Rs. 17 but Coorgs were again marked up to Rs. 28-4. Greater activity has been recorded in the cheaper priced shares particularly those standing at a considerable discount, while the announcement that Midlands and Rajagiris are to pay maiden dividends was very well received. Rajagiris are now up to Rs. 4-12 and Midlands at Rs. 4-15. Speculative business was reported in Nellithanams at Rs. 6-2, Be Be at Rs. 4-4, Manalurs at Rs. 4-4.

TEAS

The market for tea shares was fully steady but price movements were narrow. Peermades have risen to Rs. 27 and at this price a fair business was possible. There were, however, still sellers over at the close. On the other hand Periakaramalais continued to meet with good support at Rs. 17-4 but at the close sellers have withdrawn to Rs. 17-12. United Nilgiris were in demand at Rs. 116 and Chembra Peaks at Rs. 8-2. After changing hands at Rs. 7-12 Devasholas were slightly lower at Rs. 7-10. Ouchterloney Valley 6% debentures were taken off the market at Rs. 104 and Rs. 104-8 while a few isolated deals were reported in Ouchterloney Valley ordinaries at Re. 1-9.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 9th November were:—

Rubber, including export licenses	...	56.50 cents a lb.
Rubber Export Quota ...	...	4.00 cents a lb.
1st quality rubber alone ...	...	52.00 cents a lb.

TEA QUOTA PRICES

The Quota prices ruling in South India on 19th November were:—

Tea Export Rights ...	...	9 annas per lb.
Production Rights ...	...	1 anna 3 pies per lb.

H. D. PATCH

Horace Dudley Patch died at Bangalore on 2nd November 1940.

The late Mr. H. D. Patch was for a number of years with the Madura Co., Ltd., at Calicut and Cochin, and since 1931 had been with Aspinwall & Co., Ltd., at Cochin in their Estates Agency Department. He was a Director of The Peermade Tea Co., Ltd. (Travancore) and The Motor Transport Co., Ltd., of Kottayam.

R. C. ELERS

Reginald Charles Elers died at Pambanar Estate, Peermade, on 5th November 1940.

The late Mr. R. C. Elers was the Manager of Pambanar Estate, Peermade (Travancore), for several years.

FORTNIGHTLY RAINFALL STATEMENT

October 26, 1940 to November 9, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ...	2·25	2·78	106·28	111·31	25. Kotagiri ...	4·59	4·80	42·00	51·39
3. Kallar B'dge	4·15	5·34	129·61	139·10	26. Ootacamund...	2·07	1·94	39·09	43·10
4. Koney ...	1·50	3·18	113·39	118·07	27. Yercaud ...	1·57	...	48·82	50·39
8. Twyford ...	1·60	4·49	228·76	234·85	30. Devarshola T.E.S. ...	1·98	0·74	66·90	69·62
9. Pettimudi ...	2·27	1·29	298·69	302·25	31. CALICUT ...	2·17	2·25	108·20	112·62
10. Kalaar ...	1·93	2·05	239·83	243·81	32. Kuttiyadi ...	4·20	4·07	126·23	134·50
11. Chittavurrai...	2·85	3·84	46·52	53·21	33. Vayitri ...	2·27	2·25	160·69	165·21
12. BODI'KANUR ...	...	9·70	15·61	25·31	34. Manantoddi...	...	0·88	106·33	107·21
13. COCHIN ...	1·41	1·05	117·69	120·15	35. Bilgiris ...	1·98	2·56	64·20	68·74
14. Mooply ...	0·52	0·97	122·92	124·91	38. Pollibetta ...	3·92	0·05	66·54	70·51
15. Pachaimallai	2·19	...	127·60	129·79	39. Coovercolly ...	1·18	0·19	78·57	79·94
16. Mudis ...	2·17	...	191·51	193·68	41. Kadamane ...	1·31	...	248·48	249·79
17. POLLACHI ...	2·22	3·34	31·77	37·33	43. Merthisub'gey	1·87	1·01	125·49	128·37
18. Ropeway Waterfall ...	2 64	11·47	71·97	86·08	45. Balehonnur...	1·91	0·64	116·08	118·63
21. Kerala Estate	1·61	0·25	152·61	154·47	46. MANGALORE ...	3·89	0·12	138·52	142·53
22. Naduvattam	3·15	0·90	101·83	105·88	47. MADRAS ...	5·97	5·06	19·68	30·71
24. Coonoor ...	6·26	5·60	33·02	44·78					

N.R. = No Return Received.

Planters' Chronicle

Vol. XXXV, No. 25] [December 7, 1940

All Communications to be addressed to the Editor, 'Glenview', Coonoor, Nilgiris

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EDITORIAL

Owing to the tactics of the Congress Party in attending the recent session of the Central Assembly for the sole purpose of throwing out the Finance Bill so as to compel its certification, many days have passed in vicious attacks against the Government in the same old hacknied Congress strain, dealing with anything and everything except the Finance Bill itself, and deliberately wasting time which could have been far more profitably spent in getting on with legislative work for the benefit of India and her industries. We learn that the proposed Coffee Market Control Bill has, in consequence been crowded out. We hope that the Government will realise that this failure to get the Bill laid before the legislature last month may well have a very unsettling effect on the local coffee market, unless an ordinance is promulgated at once to give effect to the proposed Coffee Control Scheme, even if only as a temporary measure until the next meeting of the legislature. It is most unfortunate for the coffee industry that the expectations that the control scheme would be launched during the month of November have not been fulfilled, but it is quite on the cards that, by the time this issue reaches our readers, the hoped-for ordinance will have been notified.

* * * * * *

At the moment of writing, there is such a short distance to go that we are confident that in a few days' time the amount asked for in the President's Appeal for the S.I.P. Benevolent Fund will be reached before these words are in print. In our issue of 26th October we said we would like to see the Rs. 15,000 mark reached before Christmas. This is now certain, with three weeks to spare, and we take this opportunity of expressing our thanks to all those who have so generously responded to the President's appeal.

As has been pointed out in the Secretary's notes accompanying the 'Thermometer', which has been appearing on the pages so kindly lent to the Fund by our Advertisers, the Fund is losing a large amount of income owing to so many of its regular subscribers having left their billets for military service. Generous as the response to the appeal has been, and still more generous the undertaking of the anonymous benefactor who is giving a further Rs. 15,000 as soon as the other donations and promises have been collected, the matter of special donations cannot be allowed to stop at the amount asked for in the special appeal from the President as the minimum required to earn the 'bonus' promised by the anonymous donor. Much as we all hope that it may not, we must face the fact that this war may continue for some years, during the whole of which time the Fund has in prospect not only a drop in annual subscriptions of Rs. 1,500, or even more, a year, but also the probability of still greater calls on it as a result of the war. Hence this drive for special donations must be continued until the end of March next.

This being so, we do hope that Companies, Estates, Associations and *all* Planters still working in South India, whether they have ever been members of the Fund or not, will make this one supreme effort to build up the Fund as generously as possible until the end of March next, so that, whatever calls may be made on the Fund during the next few years, they may be met without having to break heavily into its comparatively slender reserves which have taken 31 years to build up.

Finally, we note that on page ii of our last issue, the Secretary asked if any other generous volunteer would come forward and offer to double any amount that may be collected over and above this first Rs. 15,000. We would suggest as an alternative, will several volunteers do so, either as a syndicate, or individually for each successive further Rs 1,000 collected? We know that with many planters times are exceedingly difficult, but we do feel that there must be more than one of our community who is in a position to be generous in such a good cause and, at the same time, *willing* to be so, either anonymously or otherwise.

* * * * * *

Last month the Legislative Assembly passed a Bill to enable companies in British India to make donations to public funds and to make investments in Government Loans floated for the purpose of assisting the prosecution of the present war. Certain Indian Companies and Clubs registered under the Indian Companies Act, 1913, have felt themselves legally barred from making such donations because their Memoranda of Association do not authorise such donations, and the Memoranda cannot be altered under the Act so as to make such contributions permissible. The provisions of this Bill enable any Company registered under the Act to make any contributions to war funds it wishes, notwithstanding any legal impediments.

* * * * * *

We learn from the Publicity Officer to the Government of Mysore that the well known old Mysore planter, Col. W. L. Crawford, has offered a donation of Rs. 5,000, in addition to the original donation of Rs. 10,000, towards a modern type hospital in Saklaspur. In offering this, he expressed his pleasure in being permitted to associate himself with this good work, and in some small way to express his gratitude for the many happy years he had spent in the Malnaad of the beautiful and progressive State of Mysore.

We also learn from the same source that, in view of the present financial position of the Indian Institute of Science at Bangalore, the Government of Mysore have been pleased to enhance their annual grant to the Institute from Rs. 30,000 to Rs. 50,000 from 1940-41 onwards.

U. P. A. S. I. CIRCULARS

PAYMENT UNDER LONG TERM CONTRACT

In Clause 1 (i) (b) of the General Conditions of Sale under the Long Term Contract, it is specifically stated that 'the sum of 1*d*. per lb. shall be added to and form part of the contract price payable by the Minister of Food'. The same clause provides that interest at the rate of 4% per annum from the date of shipment to the date of the payment authorisation will be paid on any balance due to the producer.

In July last it was pointed out to the Tea Controller for India that, in the authorisation of final payment to Sterling Companies (Form B), the extra penny, granted to estates in South India to cover increased costs of production, was excluded from the amount on which interest was to be paid, and this Association maintained that this constituted a departure from the terms of the contract without the prior approval of producers having been obtained.

The Association has now heard from the Tea Controller that the Ministry of Food states, when the terms were being discussed with the Tea Associations in London, it was agreed that no interest on the 1*d*. a lb. should be claimed on shipments made prior to the full terms of the agreement being implemented.

The contract was deemed to be fully implemented from the date when the Assistant Controller started to pay the 70% interim payments on the contract price, and from that date the 1*d*. per lb. has been included for all purposes as part of the contract price.

The Ministry considers the arrangements thus entered into to be fair and reasonable, and is not prepared to re-open the matter.

COONOOR, C. H. BROCK,
27th November 1940. *Secretary.*

LONG TERM CONTRACT—WAR RISK INSURANCE

The following is an extract from a circular issued by the Tea Controller for India under date the 15th November 1940:—

Although the conditions of sale of tea under the long term contracts stipulate that in the circumstances therein described the risk would pass to the Ministry, the property in the tea continues to remain in the seller until the tea is actually shipped. That being so, the seller continues to be the 'owner' of the tea within the meaning of sub-clause 1 of clause (a) of Section 4 of the War Risks Goods Insurance Ordinance (1940) until it is shipped. The seller must consequently insure it under the Ordinance and keep it so insured until it is shipped.

While the tea remains the property of the seller it must be insured by the seller against war risk for full internal market value only; that is to say the value which the tea is worth at the time it is insured without taking into account the value to be attached to the export rights. Should payment have been made to the contracting estates under condition 8 of the General Conditions of Sale, the Ministry in such an event will be entitled to receive, unless the destroyed tea can be replaced by tea of identical quality, the value for which it was insured and the value of the export rights which have remained intact.

Should for any reason the amount received by the Ministry of Food on account of insurance of the destroyed tea and the value of the export rights be less than the amount paid by it to the contracting estate under condition 3 of the General Conditions of Sale then the difference will of course have to be made good to the Ministry by the contracting estate, subject to such adjustment as may be necessary.

The Ministry of Food will continue, however, to be responsible for the costs of insurance and godown rent in the circumstances set out in condition 4 of the General Conditions of Sale.

COONOOR, C. H. BROCK,
28th November 1940. *Secretary.*

RUBBER CHEST MARKINGS

Intimation has been received from the South Indian Association in London that all shipments of Rubber to the Ministry of Supply must be marked with the letters MS, six inches high, over the number indicating the grade, as follows:—

Present Grades	*To be marked*
Estate Sheet	MS 1XNY
Grade No. 1	MS 1NY
Grade No. 2	MS 2NY
Grade No. 3	MS 3
Thin Crepe	MS 9
Clean Brown Crepe— European Estates	MS 15

Further, all Bills of Lading are to be made out to the order of the Ministry of Supply.

COONOOR, C. H. BROCK,
28th November 1940. *Secretary.*

FACTORY ACT—MADRAS RULES

The Madras Rules under Section 43 of the Factory Act were amended in August 1940. The following items are taken from notes which have been prepared by the Employers' Federation of Southern India to assist Members in understanding the changes which have been made in the Madras Rules:—

Supervision.—This is dealt with by Rule 113 and the amendments have extended the categories now considered as being in a position of supervision or management to whom the provisions of Chapter IV of the Act (restrictions on working hours) do not apply.

In cotton mills all jobbers are now supervisory staff, in place of head jobbers only.

In tea factories, assistant tea makers have been added.

The panmen in sugar factories have been included.

Urgent Repairs.—Rule 114 has been amended as follows:—

	New Rule	*Old Rule*
Period during which a worker may be employed on urgent repairs on any one day	15 hours	18 hours
Ditto during any three consecutive days ...	39 ,,	50 ,,
Ditto during each period of seven consecutive days commencing from his first employment on such repairs	66 ,,	72 ,,

Exemption from Section 36 (daily hours) now applies only to adult male workers, i.e., no male below 17 years of age and no female of any age may work more than 10 hours per day on urgent repairs.

Definition (a), of urgent repairs, now reads as follows:—

(a) Repairs to any part of the machinery, plant or structure of a factory which are of such a nature that delay in their execution would involve danger to human life or safety or the stoppage of manufacturing process.

An additional definition is included:—

(d) Repairs in connection with a change of motive power, for example from steam to electricity or *vice versa,* when such work cannot possibly be done without stoppage of the normal manufacturing process.

Preparatory or complementary work—Rule 115.—Exemption regarding spreadover under Section 38 previously granted is now withdrawn.

The provisions regarding notices of periods of work under Sections 39 and 40 do not now apply to persons exempted under Rule 115, Sub Rule 1.

Exemption from Section 36 (daily hours) now applies only to adult male workers.

Intermittent work—Rule 116.—Exemption from Section 38 (spreadover) is now withdrawn in all cases.

The provisions regarding notices of periods of work under Sections 39 and 40 do not now apply to persons exempted under Rule 116, Sub Rule 1.

Exemption from Section 36 (daily hours) now applies only to adult male workers.

Certain workers engaged in handling raw materials or finished articles mainly outside the factory premises—Rule 116.—Exemption from the provisions regarding spreadover under Section 38 is now withdrawn. A new condition of exemption from the provisions of Section 36 (daily hours) is added, restricting it to adult male workers.

Watchmen, and workers engaged in fire-protection duties—New Rule.—Watchmen and persons engaged in fire-protection duties *not engaged* on three 8-hour shifts are exempt from Section 34 (weekly hours), but may not work more than 60 hours per week.

Those *engaged* on three 8-hour shifts are exempt from Section 35 (weekly holiday) and Section 37 (intervals of rest) subject respectively to the grant of a holiday within every 13 days and sufficient time being allowed for meals.

Provisions regarding the notice of periods for work under Section 39 shall not apply to the specification of the period of rest.

A shift worker who is required to work in a relay as a substitute shall be exempt from Sections 34 (weekly hours), 36 (daily hours), 37 (intervals for rest) and 38 (spreadover) subject to the following conditions:—

(*i*) in the case of exemption from Section 36 (daily hours) and Section 38 (spreadover), the same worker may be employed on two consecutive 8-hour shifts provided that this does not occur more than once in 14 days.

(*ii*) due to the employment on such emergency the total weekly hours shall not exceed the ordinary weekly hours by more than 8.

Electrical generating stations—Rule 117.—For all work in this class of factory provisions for exemption from Sections 35 (weekly holiday) and 38 (spreadover) are now withdrawn.

Provision for exemption from Section 36 (daily hours) is now confined to adult male workers.

Manufacturing process dependent upon irregular natural forces—*Rule* **120.**—Under the amended Rules, an additional classification of work is inserted in the schedule to Rule 120, which is as under:—

'Work in showing reflectors, shifting furniture on the set or as clap boys in the process of shooting films in cinema studios.'

Workers engaged in this class of work are exempt from Sections 35 (weekly holiday) and 37 (rest intervals).

A new sub-rule 120 (3) is inserted in the amended Rules. This sub-rule provides for the maintenance of a muster-roll in a prescribed form correctly showing therein every day the actual periods of employment of each worker.

COONOOR, C. H. BROCK,
29th November 1940. *Secretary.*

COCHIN HARBOUR

At a meeting of the Cochin Harbour Advisory Committee the following subjects among others were discussed:—

The position of the Port Authorities was that 'Terminals' should not be added where they did not exist before, that all rail and road traffic should come to and go from the Willingdon island except local Ernakulam traffic, that the principle of station-to-station rates should be adopted to apply to Willingdon island in all cases where it existed before, and that the 'Terminals' on Willingdon island should not be reduced except with the concurrence of the Port.

After a prolonged discussion, it was resolved that the question be referred to the Cochin Government, the Port Administration and the S.I.R. Authorities for settlement by mutual adjustment.

As regards the use of the Willingdon Island Wharf, it was resolved that the Port should have a joint discussion with the local shipping interests, on the questions relating to the berthing of vessels at the wharf and that, in the meantime, consignees should be refunded half the block fees paid by them under protest.

—*Southern India Commerce.*

'RUBBER PRODUCING COMPANIES'

The 1940 edition of *Rubber Producing Companies* makes an opportune appearance—at a time when the attractions of rubber shares are becoming somewhat belatedly apparent to the investing public. All the well-known features of this manual are retained with up-to-date information, such as forward sales, capitalisation per planted acre, investments, and reserves. A valuable feature is the analyses of results of the past few years. The work contains particulars of about 550 undertakings, and is carefully compiled by Mr. C. H. R. Whitehorn, Secretary of the Mincing Lane Tea and Rubber Share Brokers' Association, Plantation House, E.C.3, by whom the manual, which may be described as the 'Official Guide for Investors in Rubber Shares', is issued.

Rubber Producing Companies, 1940 is obtainable from *The Financial Times*, 72, Coleman-street, E.C.2, and the Mincing Lane Tea and Rubber Share Brokers' Association, Plantation House, E.C.3. The price is 7*s*. 6*d*. net, or 8*s*. 1*d*. post free (abroad 8*s*. 1½*d*.).

—*T. & R. Mail.*

REVIEW

Vegetative Propagation of Crops

The Imperial Bureau of Horticulture and Plantation Crops have lately issued Technical Communication No. 13 entitled *Vegetative Propagation of Tropical and Sub-Tropical Plantation Crops.* The publication has been compiled by G. St. Clair Feilden, and the drawings of propagation methods and accompanying descriptions are by R. J. Garner, both of the East Malling Research Station.

This is a publication which should appeal immediately to all Planters, and to anyone who is interested in gardening, for it gives a concise and clear description of all the commonly used, and not so commonly used, methods of vegetative propagation. The Authors have avoided as far as possible the use of technical terms in their descriptions of methods, and where technical terms have been used pains have been taken to show what is meant. So this is a work the layman can read and understand without difficulty; the descriptions of methods, moreover, are accompanied by excellent diagrams and drawings. Here then for the first time to the writer's knowledge may be found in a few pages an adequate description of propagation methods.

The first part of the publication is devoted to an account of the various ways by which budding can be done, and includes descriptions of Chip budding; Flute budding; the Forkert and Modified Forkert methods; Patch budding; Ring budding; and Shield budding. Then follows an account of the Etiolation method of propagation, which is essentially a form of layering; the modification of this method found necessary with the ever-green trees of the Tropics are included. From Etiolation the publication goes on to describe the various methods of grafting:—here again is a long list which includes among others, Saddle graft; Side graft; Slotted side graft; Strap or Bastard Whip-and-Tongue graft. And that is not all.

Other methods of vegetative propagation described are Inarching, Layering and Topworking. The description of all these methods is followed by short sections which fill a useful purpose by giving a recipe for Grafting Wax for use in the tropics; by mention of Bud dressings, where attention is drawn to the use of petroleum jelly; and mention of Grafting tape; tying material and potting baskets. It is hoped that these lists above mentioned will show how comprehensive is this side of the publication; yet they occupy only 22 pages of the text.

The second part of the Communication deals with Plant Varieties. A large number of plants are dealt with one by one, and the authors have given an account for each variety of the methods which have been adopted and found useful in the vegetative propagation of these plants. There is, moreover, a list of references for each variety which will be useful for those who would like to study further the propagation methods of a particular plant or crop. All the important tropical crops are included, and of special interest to Planters in S. India, will be the sections dealing with Tea, Rubber, Coffee, Cinchona, Cloves.

This is a publication which will give immense pleasure and enlightenment to all who have to deal with Agriculture or Garden plants, and it should find a place in the home of every garden lover. The authors are to be congratulated on an outstanding achievement which has involved the collection of data from all parts of the tropics and sub-tropics. The

Communication is published by the Imperial Bureau of Horticulture and Plantation Crops, East Malling, Kent, England, and the price is 3/6.

30th October 1940.

J. D. MANNING,
U.P.A.S.I. Tea Scientific Officer.

THE EYE-FLY PEST

The thirteenth meeting of the Ross Institute Industrial Advisory Committee was held in London on 6th August 1940. At this meeting, which was presided over by Mr. G. H. Masefield, Major C. S. P. Hamilton of the Juri Valley Medical Association gave an interesting account of his investigations into the Eye-fly pest. In the course of his remarks, Major Hamilton said:—

The eye-fly is a pest which we all know in Assam. It is also prevalent in certain other districts in India. The pest is an irritating one, very irritating indeed from the point of view of the worker in a laboratory, and very irritating from the point of view of the Europeans in their bungalows and especially so for their children; more important still, very irritating to the tea garden workers and their families. It is irritating in many ways, not only because it causes actual irritation but because it also causes very bad inflammation of the eyes—conjunctivitis. To give you an idea how bad this is, in one season alone, out of 21,000 workers whom I look after, in less than nine weeks, I attended 2,500 cases of conjunctivitis in the Juri Valley, Sylhet.

Now the average hospital days for treatment of these cases is 7 to 8. Every single case has to have someone to look after it. If it is a child he or she has to have the mother, if an adult the husband or the wife as the case may be. This means two people absent for 7-8 days, so you can realise that there is a very considerable loss of time and labour.

In addition to that the eye affection is very, very serious and it gives the patient great pain. Although formerly we thought there were few complications, there are complications which can be very serious. In the Juri district alone, even after skilled treatment, our complication rate is nearly 2 per cent., that is 2 per cent. of those 2,000 odd cases have permanent affection of the eye.

From a humanitarian point of view the position is much worse. Many neighbouring villagers are not under our medical control. Amongst these villagers the complication rate from this disease is very much higher, and the misery caused to the inhabitants is very considerable. I have been through many hundreds of villagers and have seen many blind villagers; on taking the medical history of these patients, without a doubt blindness in many instances was due to untreated eye-fly conjunctivitis.

Investigation into the life history of the eye-fly has been carried out by very capable people. Some of these investigators have found in their districts that the eye-fly breeds in ammoniacal soil. In one district in India they actually bred the fly through all the stages from the egg to the adult. I am not too sure that they bred the same fly as we have in the Juri Valley. On this point it is very important to make sure whether the pest known as the eye-fly pest which, in our district is caused by the fly called the *Siphunculina funicola*, is due to the same fly in other districts—I do not know.

I have worked on this subject for two and a half years, with the help of my Indian assistants, incorrectly assuming we would find the fly breeding in the ammoniacal soil as everyone told us it probably did; but we soon found it did not breed in ammoniacal soil in our area. Then I came to the conclusion, as most of our buildings are thatched, that it might breed in the thatch of our bungalows. I was very luckily situated in the midst of a jungle miles from anywhere, and was able to work every night myself and to send out people to take fresh specimens for examination. I found the egg larva and the pupa stage of the fly in the thatch, and sent these home to be examined by an entomologist, because as a general practitioner, I had encroached on his work. Anyhow, quite rightly he said: 'I do not believe one can prove that these eggs, larvae and pupae are those of the eye-fly, *Siphunculina funicola*, unless you breed out the adult fly from them.'

Whether it was providence watching over us or what it was, I do not know, but the very day I got that letter from the School of Tropical Medicine, a little laboratory boy came in great excitement to my bungalow and said I had to go with him at once. I asked him why he was so excited, and he replied there was a small fly laying eggs in the thatch of his house, and actually this little chap had seen it himself with a torch. I went there and saw it, to my utter amazement.

We cut out the piece of thatch and there was our old friend, the *Siphunculina funicola,* actually laying her eggs in the thatch of this boy's house. Having carefully cut out the thatch on which the fly was laying her eggs and preserved it intact, we forwarded the specimen home asking the School of Tropical Medicine whether they would agree (1) whether it was the *Siphunculina funicola,* and (2) whether they agree it was laying its eggs in the thatch (the fly not having been removed or touched in any way, it being still on the piece of thatch of the bungalow). They then agreed with me that they thought it was the *Siphunculina funicola.* However, the Professor of Entomology himself said he would not like to give a critical opinion whether it was the actual *Siphunculina funicola* fly, though without doubt it looked like it, and was laying its eggs in the thatch. Once again my luck was in, as I pulled out some more thatch from my own bungalow roof, and in it I found many larvae of the fly. I put this specimen of thatch and larvae in special tubes containing nothing but the thatch and the larvae, and it produced thirty to forty of those flies. I sent them to London, and this time the Professor of Entomology said he really thought we had discovered the actual fly, but would like to send it to an expert. It was sent to America to one of the only experts they knew on this type of fly (the oscinid), and Professor Curtis Sabrosky gave his critical opinion that without doubt it was the *Siphunculina funicola.* Thus we know for a fact that, in our district in which this eye-fly causes so much conjunctivitis, the fly breeds in thatch, and so far as we know it does not breed anywhere else. We are told it may breed in other areas in different materials, e.g., ammoniacal soil. In other districts the eye-fly may not be the same species as the fly described above.

Just before leaving Sylhet we were working hard in order to discover a solution which might be sprayed on the thatch of labourers' houses to prevent this eye-fly breeding; I had hopes of producing something which, at least, would alleviate this trouble.

Gentlemen, all I ask you now is that you will not forget the eye-fly, and you will do all in your power, if I am not able after this War, to carry on research, to get someone else to carry it on.

U. P. A. S. I. TEA SCIENTIFIC SECTION

ENQUIRIES AND REPLIES OF GENERAL INTEREST

The following represent the second of the series of enquiries and replies:—

Question 6. FERTILISERS FOR GREEN MANURE CROPS. Please advise me what fertiliser I can best use for improving the growth of green manure crops, such as Crotalarias, and with amount advisable per acre. The soil has been under grass for about 30 years, but was under coffee for 20 or 30 previous to that and originally carried a good stand of virgin forest timber. (Nelliampathy P.A.)

Answer.—An application of 200 lbs. per acre of Steamed Bone Meal should make a great difference to the growth of green manure crops. Not only in a majority of S. Indian soils is the amount of available phosphate very limited, and particularly in soils which have been cropped for years, and subject to erosion, but available phosphate appears to be the important ingredient for growth of legumes. If it is possible to help the green manures to get a start with cattle manure, a small application of this is advised, but there is no point in adding a nitrogen containing artificial fertiliser since the plants would use that nitrogen and draw less from the atmosphere by way of their symbiotic relationship with nodule forming bacteria.

Question 7. TIME OF MANURING PRUNED TEA. Please let me know if you consider it detrimental to manure newly pruned areas just prior to the monsoon. The artificial manure mixture analyses out:—

Nitrogen	... ... *30 lbs.*	
Phos. Acid	... ... *20 lbs.*	
Potash	... ... *10 lbs.*	(C.T.P.A.)

Answer.—While it cannot be considered detrimental to follow the programme you mention, there is reason to believe the programme would not be such as to make the best use of the mixture. In the first place you say the areas are newly pruned. It is now well established that manuring of newly pruned areas with artificials is not the most economical way of using the artificials since, until the bushes are again in full foliage, they cannot make the best use of the plant food added and, in the meantime, a proportion of the applied fertilisers and notably the nitrogen would be lost by leaching and other means. Secondly, the particular climatic conditions of a heavy S.W. monsoon might cause a good deal of leaching of nitrogen. It is therefore likely that a more satisfactory response to the fertilisers would be obtained by delaying the application until after the worst of the monsoon by which time the tea would be in full foliage and capable of absorbing the plant food contained in the fertilisers. The mixture you give appears to be quite a useful one.

Question 8. BORER IN TEA NURSERY. I found in my tea nursery plants dying out and when I examined some of these, I found some caterpillars inside the main stems. They bore through and go right up the stem, eating their way I think, and as a result the plants die off. I am sending some of these caterpillars and will be glad if you will let me know the life history and preventative measures to be adopted. (S.T.P.A.)

Answer.—The borer is *Zeuzera coffeae* which is commonly known as the Red Borer. It occurs practically throughout the tea districts but fortunately it has shown no tendency to appear in large numbers capable of causing widespread damage. The eggs, which are oval and have an opaque waxy appearance, are deposited in crevices of the stems. The caterpillar is red in colour with a black plate present both at front and hind end of its body. It bores in the stem or branches of tea and, on attaining maturity, constructs within its tunnel a small chamber where it changes into the pupal stage. The emerging moth has translucent white wings the upper pair marked with numerous steel-blue spots and bars. In nurseries the stems of young plants may be killed to near ground level, and fresh shoots may develop from below. In some cases injury may extend to the roots in which case nothing can be done to save the plants.

The infected stem or branch should be pruned back to healthy wood, and the infected portion burnt to destroy the borer inside. Plants which have been killed should be uprooted and burnt. The insect is a slow breeder, and its spread will not be rapid if the infested plants are promptly dealt with in the above manner.

Petrol, tar or insecticide such as carbon disulphide if put into the tunnels will kill the borer inside, and this is the treatment usually given in the case of mature tea where the injuries to the branches have extended below pruning level.

Question 9. ANALYSIS OF SOIL FOR TOP DRESSING. I am sending a sample of jungle soil which it is proposed to use as top dressing. I should be grateful if you will let me know the total nitrogen content of same. (K.D.P.A.)

Answer.—The analysis of the sample is:—

% moisture in sample as received 42.8

% Nitrogen (on moisture free basis) 1.09

You will notice that the Nitrogen content is unusually high, and this would seem to be a most suitable soil for the purpose. The soil is also in excellent physical condition.

Question 10. ARTIFICIAL CRACKING OF TEA SEED. Will you please let me know whether it is advisable to crack tea seed for easy germination, or whether it is better to let nature take its course. Is cracking in any way harmful? By cracking at the right place can one be assured of a straight root? (A.P.A.)

Answer.—The practice of artificially cracking tea seed before germination is uncommon, though it is done occasionally. Success seems to depend on the care given to the process, as it is essential not to injure the cotyledons or the embryo plant within the shell. Adoption of the practice on a large scale is fraught with danger, since by cracking seed artificially there is danger of the seed getting more than the optimum quantity of water and this interferes with the turgidity of the embryo plant. It is therefore advisable to allow nature to work for itself in the matter of germination. To obtain straight roots sow the seed eye downwards, and see that it is not disturbed from this position.

J. D. MANNING,
Tea Scientific Officer.

MILD COFFEE FOR U. S. A.

Four-fifths of all the coffee exported from Colombia goes to the United States. The United States is a quality coffee market and the growing popularity of Colombians in that country is indicative of the high regard in which mild coffees are held by American coffee roasters. It is significant that the percentage of increase in the use of Colombians in the United States has grown steadily.

THE COFFEE HABIT

The *Weekly Scotsman*, in pointing out that Glasgow drinks more coffee than any other town in the United Kingdom, professes that it may well take the place of tea. With apologies to 'Katie' of the Great War Ditty, that paper breaks into song—

'C-C-C-Coffee, Beautiful Coffee!
You're the Only D-D-D-Drink that I. Adore!'

When coffee was first introduced into Britain, during the seventeenth century, a petition was presented to Parliament asking the Commons to prohibit coffee on the ground that it was economically wasteful and injurious to health. The argument went:—

More coffee—less beer,
Less beer—less malt.
Consequently ruin for the farmers and the brewers.

The petition was successful and it is because of that seventeenth-century limitation that the people of Britain drink less coffee than people on the Continent. It is all a matter of habit.

In Sweden, King Gustav III, becoming tired of the controversy waged between the tea interests and the coffee dealers, commuted the sentences of two identical twin brothers who had been sentenced to death on conviction for murder. The King ordered that one twin should be given a large daily dose of tea and the other a similar amount of coffee. It was thought that in this way the public might have a demonstration as to which beverage was more harmful to health.

Public interest, however, died down before the brothers did. At last one died at the age of 83. It was the tea drinker. This burning question was thus settled and the Swedish people now drink more coffee per head of the population than any other people in the world.

It is likely that, with coffee plentiful and tea rationed, a domestic revolution will take place in Britain and that before the war is over everyone will be as keen about coffee as the majority of people are now about tea. It is now a patriotic duty—and may become a pleasure—to drink coffee.

There is enough coffee in the United Kingdom at present to keep us going for almost three years. About four-fifths of this is Continental coffee which means that it will be available at prices enabling hundreds of thousands to afford coffee who hitherto found it beyond their means. Special processes for roasting and blending have been adopted in order to prepare it for the English palate. In any case the Continental coffee allows of great economy in preparation and is now available at very reasonable prices.

The new coffee will not, however, be widely obtainable in small containers, but it should be remembered that the larger packages will keep for quite a time if care is taken to store in air tight containers. These larger packets, too, have the effect of keeping prices down to the absolute minimum.

Coffee has played an important part in the history of Great Britain. Lloyds, the biggest Mercantile Insurance House in the world, began as a simple coffee house. It is to England's eighteenth century coffee houses that we owe much of the greatest of our English literature. The whole modern architectural movement began when Charles Rennie Mackintosh was asked by Kate Chranston of Glasgow to design restaurants where

Glasgow housewives could spend an hour in relaxation from shopping. Today Glasgow probably drinks more coffee per head than any other town in Great Britain and in almost every Glasgow office coffee is the usual 'elevenses'. Glasgow businessmen do deals of many hundreds of thousands of pounds over a cup of coffee. This is an idea that could well be emulated. Office workers should substitute coffee for 11 o'clock and afternoon tea.

Even if coffee has to be prepared on the premises this can be done very simply. There are innumerable recipes, and every connoisseur of coffee will tell you that there is only one way to make it, his own. Be that as it may, here is a simple method of preparing coffee:—

First, warm your pot, which should be earthenware if possible, really well before you put in the coffee. Secondly, don't be mean with the coffee. Allow two heaped teaspoonfuls for each cup. Thirdly, see that your kettle is really boiling, take coffee pot to the kettle, not the kettle to the coffee pot, pour on just the right amount of water and give the coffee a good stir.

Cover the jug, allow it to stand a couple of minutes, then give a second stir with a downward motion of the spoon. This will settle the grounds. After a further two minutes the coffee will be ready.

Employers will find that coffee is a great stimulant and that the energy of their staffs will be greatly increased just at the time when energy tends to be at its lowest ebb. 'Coffee which makes the politician wise', according to Pope, will help the workers of Britain to win through to victory.

INDIA'S WAR CONTRIBUTION

Arrangements have been completed for the supply by India to Britain of 300,000 tons of pig and foundry iron at the rate of 50,000 tons a month. The British Government has also been informed that India will be able to meet present demands for steel from the Middle East, Iraq, Kenya and Uganda.

After meeting all the demands in sight, India will have a balance of untested light steel products amounting to 10,000 tons a month available for Britain, as well as 10,000 tons of scrap metal a month for the next twelve months.

An order for 58,317,000 sandbags has been placed with the Indian Jute Mills Association by the British Government through the Government of India. Delivery is to be made between October and December.

At the same time, figures released here show that firm orders for war supplies received by the Government of India supply department during the first year of the war total over £34,500,000.

Sandbags to the number of 700,000,000 have been supplied, while up to June 1 orders had been completed for 9,000,000 yards of khaki drill, 4,500,000 yards of mockleno cloth, and barrack blankets valued at £2,000,000. Up to July 13, orders completed for piece-goods, cotton yarn and webbing were valued at nearly £4,000,000.

Other orders include large quantities of timber, boots and shoes, foodstuffs, pig-iron, cigarettes, lubricating oils, and numerous textile and engineering stores.—*Reuter.*

—*T. & R. Mail.*

INDIAN RUBBER LICENSING COMMITTE

ANNOUNCEMENT

All rubber producers are hereby informed that:—

1. The Licensing Committee has decided to postpone the last date for receiving applications for export licenses this year from 17th December to 21st December. The books of the Licensing Committee will remain closed as usual from the 22nd December 1940 to 14th January 1941 inclusive.

2. The provisional allotment of quota for 1941 will be 60% of each estate's 1940 basic crop.

3. License fee during 1941 will, subject to the approval of the Government of India, be 2½ annas per 100 pounds.

Rubber Control Office,
Malankara Buildings,
Kottayam,
Travancore,
19th November 1940.

(By Order).
P. KURIAN JOHN,
Rubber Export Controller for India.

AMERICAN RUBBER MARKET

The importance of the American market to the rubber producing industry is discussed in the following article from the *Financial News*:—

As is well known, America is by far the world's largest consumer of rubber, and in view of this fact, the level of consumption in that country is of paramount importance to the rubber-producing industry. Indeed, now that many continental markets have been lost, the rate of American absorption assumes even greater importance. During 1939, total world absorption was 1,093,875 tons, of which the United States consumed no less than 592,000 tons. World absorption in 1938 was 933,600 tons, the American total amounting to 437,000 tons. Thus, the increase in world consumption of 160,275 tons was almost entirely due to the rise in American absorption. Consumption of rubber in the United States and in the United Kingdom was quite good in the first six months of this year, but will have to show further improvement if it is to offset the decline in consumption in the Continent of Europe.

Since August of last year, consumption in the Continent of Europe has been estimated, and, as could only be expected, estimates are now considerably lower than those for the first two or three months of the year. During the first half of 1939, the Continent consumed nearly 136,000 tons, whereas for the first six months of this year consumption is estimated at only 108,000 tons. The June estimate was only 10,000 tons, against 21,000 tons for May, and it can be taken for granted that the total for the year will make a poor showing when compared with that for 1939.

However, despite the fact that U.S. consumption has shown a falling off in past couple of months, it seems likely that the impetus of the rearmament drive in America—assisted, of course, by war orders from the United Kingdom—will be reflected in a fresh increase in consumption in the later months of the year. Indeed, if the average rate of the first six months of the year can be maintained—and there is no reason why it should not—the total for the year will make a good showing, and, assisted by heavier consumption in the U.K., will do much to offset the decline in absorption in the Continent of Europe. It is encouraging to note, too, that consumption by the rest of the world in the first half of 1940 compares favourably with that for the corresponding period of 1939.

COFFEE BORER CONTROL IN MYSORE

In the Annual Report of the Mysore Agricultural Department for the year 1938-39 which has just come to hand, the following report is given regarding the Mysore Government's Coffee Borer control work in the State:—

Fifteen Fieldmen were employed for the enforcement of rules under the Pest Act for coffee borer control. 32¾ lakhs of borer-affected plants were uprooted and destroyed and another 1¼ lakhs of borer-infested plants were destroyed as a result of 426 notices issued to unwilling planters. Sixty-six thousand and thirty-four borer plants were got removed under Departmental supervision where the planters did not act in spite of issue of notices to them. The coffee stem borer has become a menace to coffee plantations and the fall in the price of coffee has greatly handicapped coffee planters from undertaking systematic destruction of borer-affected plants. Unless coffee planters undertake systematic destruction of the affected bushes in time, the coffee borer is likely to increase to an alarming proportion in the course of a few years.

Experiments are in progress on the Balehonnur Coffee Experiment Station to ascertain the efficacy of several proprietary ovicidal stem-washes which could be utilised to prevent the spread of the pest. The hairy caterpillar of cardamom appeared in severe form during the year. As large areas are affected, control of the pest by spraying has been found to be impracticable, but as the caterpillar has a pupating period of nearly six months and the pupae can be easily collected from underneath the shade trees in the estates, the collection of pupae and their destruction are practical means of controlling this pest. A circular regarding the methods of control was published and distributed to the planters in the affected areas. Pyrethrum powder has been found to be a useful insecticide against cardamom thrips and the tobacco stem borer.

THE TAXONOMY OF COFFEA ARABICA L.

A recent publication of the Agronomical Institute at Campinas, Brazil, will be of great value and interest to botanists working on coffee.

It is a detailed and excellently illustrated description of the varieties and forms of Arabica Coffee to be found in the State of Sao Paulo, including several not previously described. The authors are C. A. Krig, J. E. T. Mendes and Alcides Carvalho and the illustrations are by Jose Pompeu.

The descriptions include notes on origin, tables of measurements of quantitative characters, and chromosome numbers. There is also a key to the 26 varieties and forms included.

The 58 large plates which supplement the Portuguese text will probably be of greater interest to many English readers, as they provide in themselves a reference book which needs no translation. As a rule, habit, leaf characters, flowers, fruit, parchment coffee and beans are depicted for each variety, photographs, line drawings and colour drawings being employed as may be most appropriate in each case. Altogether this is a most commendable contribution to crop taxonomy.

—*E.E.C. in Tropical Agriculture.*

AVERAGE PRICES OF COMMON TEAS— OCTOBER 1940

	Wholesale (Selling prices of dealer to retailer)			Retail (Selling prices of retailer to consumer)		
	Rs.	A.	P.	Rs.	A.	P.
Trichinopoly ...	0	7	8	0	8	5
Srirangam ...	0	7	6	0	8	3
Mayavaram ...	0	8	6	0	9	0
Kumbakonam ...	0	8	5	0	9	5
Tanjore ...	0	8	6	0	9	3
Tiruvarur ...	0	8	6	0	9	2
Pudukottah ...	0	8	0	0	8	6
Karur ...	0	8	4	0	9	7
Erode ...	0	8	1	0	8	7
Tiruchengodu ...	0	8	3	0	8	9
Namakkal ...	0	8	1	0	8	7
Salem ...	0	8	1	0	8	9
Dharmapuri ...	0	7	11	0	8	5
Bangalore ...	0	8	1	0	8	8

MALAYAN CONSUMPTION OF TEA

The figures of Malayan consumption of tea have been revised. The following table showing the present accepted figures is published in *The Malayan Agricultural Journal*:—

Year	Imported Tea	Malayan Estate Tea	Malayan Small-holders' Production (Estimated)	Total	Percentage Malayan Consumption produced locally
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
1930	8,768,183	59,310	250,000	9,077,493	3.4
1931	6,876,748	95,662	250,000	7,222,410	4.8
1932	4,459,855	126,262	250,000	4,836,117	7.8
1933	3,300,559	148,955	250,000	3,699,514	10.8
1934	4,561,158	217,299	250,000	5,028,457	9.3
1935	4,461,532	204,014	250,000	4,915,546	9.2
1936	4,545,975	289,950	250,000	5,085,925	10.6
1937	5,263,681	411,544	250,000	5,925,225	11.2
1938	4,213,219	434,624	250,000	4,897,843	14.0
1939	4,181,677	618,472	240,000	5,040,149	17.0

JACK MAURICE HAYWARD

Missing, believed killed on 10th November 1940, as a result of Air operations.

Flying Officer J. M. Hayward was the son of the late Mr. C. J. Hayward of Goorghully Estate, Mysore, and Mrs. Walmesley of Palapilly Estate, Cochin.

HARRY WATERWORTH

Accidentally killed early in the war while on duty guarding communications when the first Expeditionary Force was on its way overseas. He was for a short time on Tuttapullum Estate, Nilgiris, and later on in Assam.

DISTRICT MEETINGS

INDIAN PLANTERS' ASSOCIATION, MYSORE

Proceedings of a meeting held at Chikmagalur on 9th July 1940.

1. Mr. Menon, Marketing Officer (Coffee), addressed the Association on the subject of the Coffee Industry of India in its manifold aspects. After Mr. Menon's address, there was a free and frank discussion. The meeting terminated with a hearty vote of thanks to Mr. Menon.

2. The Managing Committee of the Association decided to request Dr. F. X. Desouza, M.A., L.L.D., I.C.S. (Retd.), M.L.A. (Central), and M.L.C. (Mysore), to represent this Association at the U.P.A.S.I. meetings, Coonoor.

Proceedings of a meeting held on 19th August 1940.

1. A condolence resolution moved from the Chair was passed expressing the deep sense of sorrow of the planting community at the passing away of H.H. Sri Krishna Raja Wadiar Bahadur, G.C.S.I., G.B.E., Maharaja of Mysore.

2. The following resolution moved by Mr. Sylvester Pais was carried unanimously:—

'That having regard to the unsatisfactory condition of the coffee industry in India, the present policy of the Government of Mysore, calculated to encourage Darkhast of coffee lands for coffee cultivation in units of fifteen acres and less, is fraught with grave danger to coffee production already in existence, as the statistical position of coffee production is already bad, and as such it should not be rendered worse by any new policy.'

3. A Sub-Committee of 15 members was appointed to consider the various coffee control schemes put forth for consideration.

Proceedings of a meeting held on 2nd September 1940.

1. The various coffee control schemes were again considered in the light of the observations of the sub-committee appointed on 19-8-40. The meeting expressed general approval of the 'Ivor Bull Scheme' and 'The Indian Planters' Scheme'. Messrs. S. N. Ramanna and K. H. Srinivasan were thanked for drawing up 'The Indian Planters' Scheme of Coffee Control'.

2. Mr. S. N. Ramanna was elected by the Managing Committee to represent this Association at the Madras Conference on 18-9-40.

Proceedings of an Extraordinary Meeting held on 3rd September 1940.

Mr. F. E. James explained the necessity for Coffee Control and detailed the central ideas of various coffee control schemes contemplated. In particular he dwelt upon the principles underlying the 'Patterson Butter Control Scheme' of Australia.

A general discussion ensued thereafter 'In Committee'. The meeting in principle was for control and the details were left over for further discussion.

The meetings terminated with votes of thanks to Mr. F. E. James, and the President, Mr. M. Ismail Sheriff, Deputy Commissioner.

Proceedings of a meeting held on 3rd September 1940.

1. The proceedings of the last meeting held on 3rd September 1940 were confirmed.

2. The Secretary, Mr. Sylvester Pais, announced:—

(*a*) that in response to the resolution moved by Mr. B. N. Hanumanthappa, the Traffic Board of Mysore stated that a rest house would be constructed at the Mysore State frontier on the Boon (Kotteghar) Ghat.

(*b*) that in response to the resolution moved by Mr. Sylvester Pais, the Government of Mysore reserved a place for a representative of the Association on the Board of Industries and Commerce; and had nominated the President of the Indian Planters' Association of Mysore to the said seat (1940-43).

(*c*) that the Government of Mysore, in their order No. R. 6430-42 L.R. 97-29-26, dated 8-9-40, had offered 'to consider the question of giving a moderate subvention not exceeding 50 per cent of the cost, for any well considered scheme proposed by the Indian Coffee Cess Committee or by a respectable body of planters, which is calculated to promote the consumption of coffee in the country'.

(*d*) that the Secretary, U.P.A.S.I., had invited suggestions for consideration by the South Indian Railway Advisory Committee.

(*e*) that in response to the request of this Association, the Mysore Railway Authorities have ordered 'that the coffee planters of Chikmagalur[1] are granted seven days free time at Kadur to remove their goods therefrom. Free time has been sanctioned at Birur, also.

3. The Association thanked the authorities concerned in (*a*) to (*e*) above for their respective services and congratulated Mr. S. N. Ramanna for having the privilege of being the first ex-officio representative of this Association on the Board of Industries and Commerce.

4. The President informed the meeting that Mr. Sylvester Pais and himself had attended the Coffee Control Conference held at Madras on the 18th and 19th September 1940, with the Hon'ble Sir A. Ramaswamy Mudaliar, Commerce Member, Government of India. The Scheme envisaged at Madras at the said Conference was then explained in detail and discussed 'In Committee'.

The following resolutions were carried unanimously:—

(*a*) That this Association, fully realising the need for the control of the coffee industry in India, requests the Central Government speedily to put into force, by legislative enactment or by ordinance, the scheme adumbrated by the Coffee Control Conference on the 18th September 1940 at Madras, with the Hon'ble Sir A. Ramaswamy Mudaliar, Commerce Member, Government of India.

(*b*) That the I.C.C.C. should be enlarged to represent all interests.

(*c*) That this Association thanks Sir A. Ramaswamy Mudaliar, Commerce Member, Government of India, Mr. H. M. Hood, Adviser to the Governor of Madras, Rajamantrapravina N. Madhava Rao, Member, Executive Council, Mysore, Mr. Ivor Bull, Chairman, Coffee Product Section, U.P.A.S.I., Mr. F. E. James, Planting Representative on the Central Legislature, Mr. N. Kirwan, Vice-Chairman of the Indian Coffee Cess Committee, Mr. S. N. Ramanna, President, and Mr. Sylvester Pais, Honorary Secretary, of this Association, and all others that contributed to make the Coffee Control Conference a great success in such a short time.

SYLVESTER PAIS }
S. ANNAPPA SETTY } *Honorary Secretaries.*

TEA QUOTA PRICES

The Quota prices ruling in South India on 4th December were:—

Tea Export Rights	... 10 annas per lb.
Production Rights	... 1 anna 8 pies per lb.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 25th November were:—

Rubber, including export licenses	... 56.50 cents a lb.
Rubber Export Quota ...	... 2.25 cents a lb.
1st quality rubber alone ...	... 54.00 cents a lb.

CARDAMOM PRICES AT BODINAYAKANUR

The following prices are quoted by the Cardamom Planters' Co-operative Bank Ltd., as current on 29th November 1940:—

	per Thulam of 810 tolas weight
European Green No. 1	... Rs. 38 2 0 to Rs. 41 14 0
Do. No. 2	... Rs. 34 14 0 to Rs. 37 14 0
Motta Green ...	... Rs. 42 0 0 to Rs. 45 6 0
Robin Quality ...	... Rs. 50 14 0 to Rs. 51 14 0

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[1] Chikmagalur seems to be an error for 'Mysore', a reference is being made.

MARKET REPORT AND PRICES

Calcutta *(Issued by the Calcutta Tea Brokers' Association).*

Sales Nos. 21 and 22 were held on 19th, 25th and 26th November, 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 21	Sale No. 22	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	...	14 6	12 7	12 5	9 1
For Internal Consumption:—					
Leaf Teas ...	4 2	4 1	3 11	5 0	4 0
Dusts ...	4 10	5 1	4 10	4 6	4 4
Green Teas ...	6 5	6 6	6 6	5 5	6 3

RUBBER—London Rubber on December 2, 1940, 11¾*d*.

Colombo *(Issued by the Colombo Brokers' Association).*

Average prices obtained (in cents).

South Indian Tea Sales

	Nov. 19 & 26, 1940
Arnakal ...	... 80

Rubber Sales

	Nov. 21, 1940
Ribbed Smoked Sheet ...	58¼
Contract Crepe ...	58
Mottled Brown Latex Crepe	54 to 57
Brown Scrap Crepe ...	51 to 51¾

Madras *(As on 5th December 1940. Issued by Messrs. Paterson & Co.).*

The past fortnight has seen greater activity in the leading Indian stock markets. The movement appears to have first started in Calcutta and was quickly reflected in both Bombay and Madras Exchanges. Steel issues have again proved the most popular counter and a very large turnover was transacted in Indian Irons and Bengal Steels. These two issues closed below their highest on profit-taking but the under tone of the local market remains firm. Locally, active conditions have been witnessed in the textile group, sugar shares and in planting issues.

RUBBER

On the 28th November news was received that the Quota for the first quarter of 1941 was to be increased to 100%. This closely following a few dividend announcements attracted speculative interest once more into this section and fairly substantial gains have been witnessed, particularly in the cheaper priced shares standing at a discount. Cochin Malabars have risen by 4 as. and at the close there were good buyers over at Rs. 6-6. Cochin Rubbers were in demand at Rs. 14-8 ex the interim dividend of 5%. There are, however, no quoted sellers in the market near this limit. Thirumbadis have proved another popular counter and at the close there were buyers at Re. 1-11. Malankaras remained firm with buyers at Rs. 31-8 and sellers asking for Rs. 32. Among the A. V. Thomas group Midlands on the announcement of a 2½% dividend advanced to Rs. 5-4 at which price there were sellers over. Rajagiris have also declared a similar dividend and the price rose sharply from Rs. 4-13 to Rs. 5-5 C.D. Among the higher priced shares, Coorgs were firm at Rs. 28-8, Velliamuttams had buyers at Rs. 18-12, but Kalpettas were somewhat neglected at Rs. 17-12. Small speculative business has been done in Peninsular Plantations at up to Rs. 8-13, Cottinads at Rs. 5-2 X.D., Manalurs at Rs. 4-12 and Ayer Manis at Rs. 6-4.

TEAS

A considerable turnover continues to take place in local tea shares, but prices for the most part show little to no alteration. Peermades were taken up in small parcels at Rs. 27, but Periakaramalais were firmer at Rs. 17-8. Devasholas were unaltered at Rs. 7-12 while United Nilgiris advanced to Rs. 117. After a long absence business was reported in Parksides at Rs. 15-4. Kalasas were also taken up at Rs. 5-8 and Devon at Rs. 9-2 to Rs. 9-4. Among Fixed Interest Securities Ouchterloney Valley 6% debentures continued on offer at Rs. 104.

S. I. P. BENEVOLENT FUND

As the 'Thermometer' on the inside of the back cover of this issue shows, our first objective has been reached, and below we give the amounts paid and promised during the past two weeks which have brought the total up to Rs. 15,000.

Two months ago when only half this amount had been subscribed, it did not seem possible that we should be able to reach the required sum before the new year, but the response to the President's appeal has been so generous and prompt that the sum asked for has come in with just four weeks to spare from the date originally fixed, but which was extended to the end of March next as it scarcely seemed possible to collect the required amount by the end of this month.

	Rs.	A.	P.
Amount acknowledged up to 19-11-40 ...	12,771	9	8
M. R. Coghlan	30	0	0
E. T. C. Farr	20	0	0
Malayalam Plantations Ltd.	1,000	0	0
L. G. Gallaher	25	0	0
Twyford & Ashley Estates Ltd.	158	4	0
Chininhalli Estate	50	0	0
W. F. Scholfield	100	0	0
Anamallay Tea Estates Ltd.	150	0	0
Ceylon Land & Produce Co., Ltd.	500	0	0
I. W. Finlayson	25	0	0
Eric Hall	100	0	0
J. R. N. Pryde	75	0	0
Total on 2-12-40 ...	15,004	13	8

FORTNIGHTLY RAINFALL STATEMENT

November 10, 1940 to November 23, 1940—(Inclusive)

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kalthuritty ..	1·38	3·39	111·31	116·08	25. Kotagiri ...	2·21	N.R.	51·39	...
3. Kallar B'dge	6·74	4·66	139·10	150·50	26. Ootacamund...	3·76	N.R.	43·10	...
4. Koney ...	1·95	3·15	118·07	123·17	27. Yercaud ...	1·66	N.R.	50·39	...
8. Twyford ...	7·06	9 64	234·85	251·55	30. Devarshola T.E.S. ...	3·35	1·42	69·62	74·39
9. Pettimudi ...	3·81	2·22	302·25	308·28					
10. Kalaar ...	3·58	3·00	243·81	250·39	31. CALICUT ...	1·46	N.R.	112·62	...
11. Chittavurrai...	2·63	3 85	53·21	59·89	32. Kuttiyadi ...	1·20	N.R.	134·50	...
12. BODI'KANUR...	3·40	N.R.	25·31	...	33. Vayitri ...	2·42	N.R.	165·21	...
13. COCHIN ...	...	N.R.	120·15	...	34. Manantoddi...	1·30	N.R.	107·21	...
14. Mooply ...	4·31	1·95	124·41	130·67	35. Bilgiris ...	6·01	5·15	68·74	79·90
15. Pachaimallai	6·94	3·74	134·80	145·48	38. Pollibetta ...	3·42	4·49	70·51	78·42
16. Mudis ...	4·79	3·79	199·14	207·72	39. Coovercolly ...	5·94	3 36	79·94	89·24
17. POLLACHI ...	1·87	N.R.	37·33	...	41. Kadamane ...	3·54	0·98	249·79	254·31
18. Ropeway Waterfall ...	N.R.	N.R.	86·08	...	43. Merthisub'gey	1·37	0·65	128·37	130·39
					45. Balehonnur ...	3·08	1·44	118·63	123·15
21. Kerala Estate	6·45	2·48	154·47	163·40	46. MANGALORE ...	2·77	N.R.	142·53	...
22. Naduvattam	4·86	N.R.	105·86	...	47. MADRAS ...	3·21	N.R.	30·71	...
24. Coonoor ...	2·48	N.R.	44·78	..					

N.R. = No Return Received.

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All Communications to be addressed to the Editor, ' Glenview ', Coonoor, Nilgiris

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EDITORIAL

As anticipated in our last issue the Government of India are issuing an Ordinance dealing with the Coffee Control Scheme and, on 3rd December, published a communique in this connection. The communique pointed out that if this experimental scheme is to prove successful, it is essential that it should bring under control as much as possible of the coffee crop harvested during the present year. The Central Government have accordingly decided to include a clause in the proposed Ordinance, so as to enable the provisions contained therein to be applicable to all contracts for the sale of coffee entered into after the date of this *communique*, i.e., from December 3, 1940, and also to enable them to cancel or modify any such contract if, in their opinion, such a course is necessary for the fulfilment of the objects of the scheme.

Contracts entered into before this date will not be affected, but it is intended that the Ordinance will contain provisions requiring all coffee growers and exporters, who have entered into any contracts before this date, to furnish to the Indian Coffee Cess Committee, within 14 days of the coming into force of the Ordinance, the details of any such contracts.

We believe that the Ordinance is being gazetted as we write these notes but we have not yet obtained the text of it. However, should it be received in time we hope to include it in this issue.

* * * * * *

Our readers will remember that on 5th March 1940 the Department of Education and Public Health, Madras, issued a notification amending the Rules under the Madras Prevention of Adulteration Act 1918 to the effect that Coffee shall be free from any artificial colouring matter and from any coating, facing or glazing substance. Apparently certain coffee merchants, in Virudhunagar in particular, requested the Government for a modification of this Rule. In an Order just issued by the Education and Public Health Department, Madras, dated 10th December 1940, the Government have announced that they are unable to accept the suggestions that they should cancel or modify the Rule issued as G.O. No. 874 Public Health, dated 5th March 1940, which prohibits the adulteration of coffee seeds by artificial colouring matter or by any coating, facing or glazing substance. We had not heard that such a request had been made by coffee merchants, but we are glad to learn that the Government have not complied with their request.

* * * * * *

As was reported in *The Mail* on the 22nd August last the Nilgiri District Council discussed the subject of soil erosion in the Nilgiri District, and a small Sub-Committee was appointed to study the question of soil erosion in the district and to draw up a memorandum on the subject. We now learn that this Sub-Committee has been enlarged to investigate the problem and make proposals, and that Mr. J. D. Manning, U.P.A.S.I. Tea Scientific Officer, has been invited to serve on the Committee. The immediate work of this Committee will be to prepare and report on the extent of soil wash and damage already caused to agricultural lands in the Nilgiri District; to collect statistics of land under annual crops, waste and pasturage, permanent crops, reserve forest, etc., for each unit of area; to conduct and consider mechanical and chemical analysis of various classes of soils; to enumerate practicable anti-erosion measures with a view both to the preservation of further erosion and the rehabilitation of eroded areas; and, finally, to suggest a suitable organisation to carry out anti-erosion work on a large scale. The results of the work of this Sub-Committee will be looked forward to with great interest on the part of all those who realise the extent of loss to the agricultural industry of this district which has been caused by soil erosion.

* * * * * *

The full text of the agreement for the purchase by the United States of an additional 180,000 tons of rubber as an emergency reserve was published at the end of September under the authority of the International Rubber Regulation Committee. Its terms are similar to those of the previous agreement. The rubber will be purchased as far as may be practicable, by the end of 1941. The Rubber Reserve Company intends to purchase 70,000 tons in the first quarter of the year, 50,000 tons in the second quarter, 35,000 tons in the third quarter, and the balance of 25,000 tons in the last quarter. The company will endeavour to purchase the rubber within the price-range specified—17 to 18½ cents (U.S. currency) per pound, f.o.b. Normal stocks are to be kept at a minimum of 150,000 tons. The Rubber Committee is to be informed at the end of each month as to the progress of the purchases, and the Committee will decide on the rate of release from producing countries according to the circumstances prevailing at the time. The rubber is to be held in reserve, except in the case of an emergency, until the end of 1943, and it will then be disposed of, in conjunction with the 150,000 tons provided for under the previous agreement, at a combined rate of not more than 100,000 tons per annum, and in such manner as least to disturb world prices.

* * * * * *

News has just been received that draft copies of the 1941 Contract for supplying tea to the Ministry of Food are on their way and are expected to be available at the Assistant Tea Controller's Office in Coonoor before the end of this week. The Assistant Tea Controller will circularise producers as soon as he receives the terms of this new Contract.

U. P. A. S. I. CIRCULARS

PROVINCIAL AND STATE WAR FUNDS

At the last meeting of the Rubber Section Committee, the Committee expressed their full sympathy with the aim of the proposals made by the Executive Committee that estates should subscribe to Local Government Funds through the U.P.A.S.I., but could not see their way to suggesting any fixed rate per acre. Owing to the incidence of taxation and other factors being so varied, the Committee were of the opinion that it should be left to the discretion of the individual companies and proprietary interests concerned to subscribe whatever amounts they feel that they can through the U.P.A.S.I. to the War Funds of the particular Province or State in which their estates are situated.

The Executive Committee have decided to adopt the suggestion made by the Rubber Section Committee, and all Rubber Concerns in South India, whether members of this Association or not, are now invited to make whatever contributions they feel that they can to their local War Funds through the Secretary, U.P.A.S.I., Coonoor, who will pass on the amounts contributed to the respective War Funds monthly. All amounts received will be acknowledged in the *Planters' Chronicle*, and the Association will bear all expenses incurred in receiving and forwarding.

It is known that some companies and estates have already made contributions direct to their Local Government War Funds. In such cases the donors are invited to notify the Secretary that they have done so, and the amount subscribed, so that the Committee may have some idea as to the total support which the rubber industry in South India has accorded to the various War Funds.

COONOOR, C. H. BROCK,
13*th December* 1940. *Secretary.*

STANDARDISATION OF HEALTH RETURNS

On pages 450 to 452 of the *Planters' Chronicle* issue of 26th October, details were given of a scheme for the standardisation of health returns from estates recommended for use by the Indian Tea Association.

In a circular letter to Agency Houses and Proprietary Interests dated 3rd December, the I.T.A. point out that a number of small alterations have been made in the standard forms which were described in my previous note mentioned above. For the information of such estates in South India which may be interested in these standard health returns, I give the following explanation of the alterations which the I.T.A. have made in the following forms, revised copies of which are available at the I.T.A., Calcutta.

1. *Form No. II.*—It has been pointed out that this form is not required for permanent reference since the counterfoil serves only as a report for the day and the foils are only of value in the preparation of the month's report. For these reasons this form has been reduced in size and reprinted on a cheaper quality of paper. Supplies of the new size of form are now available.

2. *Form No. VI.*—This form as originally drafted contained an error which, unfortunately, has been reproduced in the forms as printed for members' use. At the bottom right-hand corner the wording:—

Incidence of Death per 1,000 labourers ....
Death Rate (per 1,000 Population) ....
Live Birth Rate ....
Still Birth Rate ....

shall be substituted by the following:—

Maternal Mortality Rate ....
Death under 1 month per 1,000 Live Births ....
Deaths 1-12 months per 1,000 Live Births ....
Infant Mortality ....

All forms supplied by the printers in future will contain this alteration but those who have already been supplied with these forms are asked to make the alteration on the forms in their possession.

Explanatory Note.—It has been suggested by Dr. Lamprell, the principal author of this system of standardisation of health returns, that the 'Explanatory Note to Assistant Medical Officers for use in preparing the standard health returns' should be printed separately in the form of a pamphlet so that copies could be supplied to Assistant Medical Officers for their information and reference. This has been done and supplies of the 'Explanatory Note' in pamphlet form are now available in Calcutta for those who require them.

It should be noted that section II 'Detailed Monthly Report Form' item No. 4 'The number of new cases in the month' the word 'ten', towards the end of the second paragraph has been altered to 'seven'.

COONOOR, C. H. BROCK,
13th December 1940. *Secretary.*

GERMAN COFFEE RATION

The Coffee Racket is perhaps the most blatant of the food swindles hitherto perpetrated. A German home broadcast of September 23 triumphantly announced that 'by order of the Reich Minister for Food and Agriculture, real bean coffee will be distributed several times during the winter months. All persons over the age of 18 will be entitled to bean coffee instead of coffee *ersatz*.' 'This coffee supply,' added another broadcast, 'has been made possible by the close economic and political co-operation of continental Europe.'

The fact that the coffee bean does not grow in continental Europe suggests that the 'co-operation' in question took place exclusively in foreign storehouses. A glance at the coffee rations imposed on the occupied territories confirms the suspicion:

Broadcast in French (September 7).—'A new chapter has been opened in the history of coffee in France. According to a decree in the *Journal Official*, grocers will only be able to sell "New Mixture" coffee, one-third of which will be pure coffee, two-thirds, certain sweet products.'

Broadcast in Danish (September 18).—'The Press Secretariat of the Ministries announces that as from October 1, the monthly coffee ration will be decreased from 250 to 125 grammes.'

Broadcast in Norwegian (September 22).—'The Administrative Council has decided to decrease the coffee ration on ordinary coupons from 80 grammes to 60 grammes, and on additional coupons from 40 to 30 grammes.'

The balance, of course, is being lapped up by eligible coupon-holders in the Reich.

MODERN SYNTHETIC RUBBERS

The following account is taken from an article by K. Frolich which appeared in *News Edition, American Chemical Society*:—

The developments of synthetic rubber chemistry date back only to some 15 years ago. Although Germany's annual production at the end of the last World War had attained four million pounds weight of synthetic rubber, subsequent production has not been particularly rapid. The reason is not difficult to find. The earlier object was solely to develop an imitation plantation rubber, such as could compete with it in the open market. The main aim was to keep costs down. The high prices ruling in 1908-10 stimulate scientific effort, and the last war further encouraged research.

Nevertheless, the basic principle was wrong. Modern methods no longer aim at competition with low-priced plantation rubber, but rather at exceptional quality in the synthetic product. Like most naturally-occurring products, rubber has certain shortcomings that limit its applications. Its strong point is its peculiar molecular structure which accounts for its elastic properties and mechanical strength. Its weak point is its pronounced chemical reactivity which is responsible for low resistance to oxidation, lack of heat stability, and susceptibility to acids. While the first work endeavoured to duplicate Nature's product, the present effort is to reproduce, or even to improve upon, structural characteristics of the rubber molecule. Extensive researches initiated by the I.G. Farbenindustrie in 1927 with such a goal in mind led to the development of products known as Buna rubbers. Working along entirely different lines, but following the same principle, the du Pont interests developed Neoprene.

The chief synthetic rubbers manufactured today are:

Buna (generally accompanied by a number referring to specific physical properties).—A straight butadiene polymer. In this class also falls the product manufactured in Russia.

Buna S.—A co-polymer of butadiene and styrene.

Perbunan (also referred to in earlier publications as Buna N).—A co-polymer of butadiene and acrylonitrile.

Perbunan Extra.—Same type as Perbunan, but with a higher content of acrylonitrile.

Neoprene.—A polymer of chloroprene.

There is also a class of intermediate products which, although they possess definite elastic properties, do not lend themselves to the characteristic type of vulcanization because of their chemical saturation. These are *Koroseal*, a polymer of vinylchloride; *Thiokol*, a condensation product of aliphatic chlorine-containing compounds and sodium polysulphide; and *Vistanex Polybutene*, a linear polymer of isobutylene.

Although Nature's rubber production probably is the outcome of a series of condensation reactions involving oxygenated intermediates, from a structural standpoint, the rubber molecule can be considered a polymer of isoprene, or 2-methyl butadiene. The original methyl rubber manufactured in Germany was made from 2, 3-dimethyl butadiene, simply because this diolefin could be made available more readily than isoprene at that time. The present choice of butadiene and chloroprene (i.e., 2-chloro-butadiene) as raw materials for synthetic rubber production is probably also largely a matter of availability and cost. No published information leads to the conclusion that isoprene would be less suitable for the manufacture of a satisfactory product by present polymerization methods.

The first Buna rubber was produced by bulk polymerization of butadiene with metallic sodium as the promoter, the name having been derived from this combination. This also was a slow procedure and, as it did not lend itself to the production of co-polymers containing polar compounds, was abandoned in Germany for emulsion polymerization. Judging by the limited published accounts, however, the method is still in use in Russia. With the emphasis on co-polymers of the Buna S and Perbunan type, Buna rubbers are now being produced by the emulsion technique. The ingredients are emulsified with water and subjected to conditions of temperature and pressure suitable for converting them into a suspension of synthetic rubber which resembles the latex obtained from a rubber tree. Compared with older methods, the polymerization proceeds quite rapidly. Although the process requires close control, it does not present any problems that differ greatly from those ordinarily met with in modern chemical manufacturing operations. Recovery of the synthetic rubber from the emulsion is similar to the recovery of the natural rubber from latex.

Buna S is finding extensive use in German manufacture of automobile tyres which resist wear and have a longer life than those from natural rubber. Perbunan is widely utilised in fields where its special properties give it an advantage over natural rubber. The chemical substances consumed in the manufacture of these and other rubber polymers are petroleum derivatives and, with the petroleum industry's past record for large-scale operation at low cost, there is every reason for considerable expansion in the field of synthetic rubber production.

NUTRITIONAL VALUE OF BANANAS

The banana in the past has suffered from an unjustifiable belief held by many that it is an indigestible starchy fruit. In truth the well-ripened banana contains a small proportion of easily digestible starch, much sugar, some protein and a certain amount of hemicelluloses; the residual substance, mainly cellulose, is small.

As long ago as 1890, H. M. Stanley in his book *In Darkest Africa* commented on the extreme digestibility of a banana product. During attacks of acute gastritis a native-prepared banana flour, made into a gruel, was the only food he could digest. In some cases of chronic indigestion very ripe bananas have been found to be the only source of carbohydrate that could be tolerated. Myers and Rose used bananas as a suitable easily digested and well-tolerated food in cases of nephritis where the supply of nitrogenous substances in the diet must be small. Banana powder or flour has been used with success in the feeding of infants.

The banana is a rich source of energy, ranking higher than the potato; Banana 108 Cal. per 100 gm., Potato (old) 82, (new) 90. Excluding dry cereals it is amongst the cheapest energy-providing foods available to the English market. The banana is a valuable crop for local consumption because of its high yield per acre of food and energy; it has been stated that this yield, during a year can exceed that of any other crop.

Approximately 24 bananas will satisfy the energy requirement of an adult performing no manual labour (about 2,400 Calories). The relatively low amounts of protein and fat in the banana, however, render it unsuitable as a sole source of food. The addition of milk in suitable proportion to the banana provides a balanced ration adequate for all energy and tissue-building needs of the body.

In industrial and other areas where fresh fruit and vegetables are not always easily obtainable, the banana may provide a cheap and convenient source of the accessory food factors necessary to maintain full health. While the banana cannot be considered rich in any particular vitamin it contains A, B1, B2 (or G) and C in reasonable quantities; the anti-rachitic vitamin D is present in small amount only; there is little information available concerning vitamin E in the banana, though it has been reported present in small quantity.

Vitamin A, the anti-xerophthalmic vitamin, supplies of which are necessary for efficient use of foodstuffs in growth and to maintain resistance to disease, is present in greater amount than in the apple. The Gros Michel banana may be considered a good source of this vitamin. There is a wide range of values for vitamin A content amongst different banana varieties; some varieties, grown in Malaya, have much higher amounts present than the Gros Michel.

B1, the anti-neuritic vitamin, is found in the banana in amounts considerably in excess of those in other fruits and in greater amount than in white bread. As a source of this vitamin the banana is equal to many brown and whole-meal breads.

The vitamin B2 complex includes the anti-pellagra vitamin. One determination of this vitamin for the banana is 0.0075 mgm. per 100 gm., which is higher than the amounts found in most fruits.

There have been numerous estimations made of the vitamin C content of the banana and a wide range of values has been obtained. While the banana cannot be classed with the citrus fruits in its anti-scorbutic properties, it has a useful amount of vitamin C and if eaten in quantity would give a measure of protection against scurvy. The values for ascorbic acid (vitamin C) in the banana range from 0.01 to 0.15 mgm./gm.; the higher values probably being most accurate according to recent investigations into the technique of vitamin C determination. It is interesting to note that unripe bananas have a higher vitamin C content than ripe. The plantain (in many respects similar to an unripe banana) may have a vitamin C content ten times as great as a ripe banana.

The banana in common with other fruits, yields an alkaline ash (0.6 to 0.8 per cent. of the fresh weight of the pulp) containing over 50 per cent. potash; the remainder includes such important nutritional elements as phosphorus, calcium and iron. These elements are, in general, present in greater amount in bananas than in either apples or oranges. The importance of calcium and phosphorus in bone and tooth formation and general nutrition is well known. It has been stated that all the iron in the banana is in a completely available form and can be utilised in the formation of haemoglobin.

The virtues of the apple in the diet have long been appreciated and much research work has been done to ensure a constant and ample supply of this fruit for the consumer. The banana is, on every count, a more valuable fruit. It is an unusually hygienic food due to its relatively thick and resistant skin; it has a higher mineral content and a higher calorific value, weight for weight, than the apple. Its protective food (vitamin) content is more diverse than that of the apple and is greater for those vitamins common to both fruits.

—*Tropical Agriculture.*

CARDAMOM PESTS

Report on investigations on Cardamom Pests conducted under the auspices of the University of Travancore at the Research Station, Pampadampara.[1]

The Central Research Institute of the University of Travancore took up the question of finding out adequate measures to combat the ravages of certain pests which were reported to be causing serious harm to cardamom plantations in Travancore. There are about 50,000 acres of cardamom plantations in Travancore and as this crop is of considerable economic value, the University, on the advice of the Council of Research, resolved to open a Research Station in the Cardamom Hills. Mr. J. J. Murphy, Governing Director of Murphy Estates, placed at the disposal of the Research Station a limited area of plantation and other facilities at the Pampadampara Estate belonging to him. The Station was started in January this year.

The Pampadampara Cardamom Estate is situated 7 miles north of Vandenmettu on the Kumily-Devicolam track at an elevation of nearly 3,600 ft. It has nearly 1,200 acres under Cardamom, the bushes varying in age from 4 years to 32 years.

The locality has an average rainfall of 80 inches, the bulk of it falling in the S.W. monsoon between the middle of June and the middle of August. The rainfall record of the last four years is appended.

The soil is typical of forest lands of Travancore, a fine clay loam very rich in humus, except in certain low lying blocks where the soil is sandy and comparatively poor.

The variety of cardamom grown in this estate is the 'Mysore upright' and the plant is usually propagated in 'stools'. Propagation by seedlings raised from seeds is also now practised and there are a number of nurseries for the purpose. Seeds are sown in January which germinate in about 60 days' time. The seedlings are transferred to the nurseries in June and, after 12 months, they are either planted directly in the field (as is usually done for the sake of convenience) or transplanted once again in the nursery where they remain for another year. The plants begin to yield in the fifth year.

The main flowering season is from May to December and the usual picking season is from the beginning of September to the middle of April. At least 50% of the crop is harvested by December and, in normal years, the yield is at its maximum in October. The best period is from October to January.

No manuring is usually done in Cardamom Estates in Travancore, though in this estate manurial experiments have been conducted with lime, leaf ash, compost and artificial chemical fertilisers such as phosphates.

Weeding is done at least twice in the year, though in certain estates this operation is neglected.

The following diseases of Cardamom are reported.

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[1] This report is based on the inspection notes furnished by Dr. K. S. Padmanabha Iyer, Professor of Zoology, College of Science, who is in technical charge of this Station, and facts supplied by Mr. S. Jones, M.Sc., Research Officer, Pampadampara.

FUNGUS AND VIRUS DISEASES

1. *'Pythium'*.—This is fairly common in certain plots. The disease is indicated by the rotting of the tender shoots and leaves. Whether this is caused by *pythium* requires investigation.

2. *Mosaic*.—This is evident in some plants but, due to the prompt measures taken, the disease can be kept in check. The turning pale and the narrowing of the leaves are the characteristic symptoms. As soon as these symptoms are noted the affected bush is removed and burnt.

INSECT PESTS

1. *Hairy Caterpillar* (*Eupterote*).—There has been no attack by this Caterpillar on this estate. A few stray specimens were noted by Dr. K. S. Padmanabha Iyer at the time of his visit in March, 1940. This is the Caterpillar that has been reported to have done serious damage in certain other estates by completely defoliating the bushes.

2. *The Shoot Borer* (*Dichocrocis punctiferalis*). This is the Caterpillar of a small pyralid moth. This is only a very minor pest and the damage done is negligible.

3. *Thrips* (*Tæniothrips cardamomi*).—This is a recent pest of cardamoms in Travancore causing the so called 'berry disease', and it is believed that this has spread to the south from the Anamallai Hills where it was first reported some years ago. By 1937 this had spread all over Udumbanchola Pakuthi and began to invade Vandanmettu, and by 1938 stray specimens could be seen as far south as in Chakupallam Thavalam, about 5 miles north of Kumili. Some of the isolated estates south of Periyar were completely free from thrips; but here also the trouble started in 1939.

The insects inhabit the leaf sheath and the raceme and it is not uncommon to see a dozen individuals including nymphs inside a single sheath. During the flowering season both nymphs and adults can be seen inside the bracts in the racemes. The injury caused in the leaf sheath is practically little and nothing unusual is noticed except an occasional brown coloration. On the other hand the damage caused to the inflorescence is considerable. The flower buds and very young pods are lacerated for the sap and the injured portions get malformed with a corky growth. Many of the affected flowers and pods may wither and fall away. Even the inflorescence stalk, which is subjected to attack at a tender age, gets stunted and malformed as a result of which the number of pods borne by it is considerably reduced.

The life history of the pest is simple. Eggs are laid in slits made by the ovipositor in the plant and each egg is a minute transluscent pea shaped object. The egg membrane first splits and the quiescent embryos can be seen with their eyes as red spots. These come out as milky white wingless nymphs that move about and feed on the sap of the plant by laceration and sucking. The nymphs undergo four moults before they become adults. There is nothing remarkable in the second and third instart except a progressive increase in size and presence of the rudiments of the wings in the latter stage. The next stage is interesting in that the insect remains quiescent like a pupa. This moults and becomes the adult. The adult insects, though winged, have little power of flight; but with the wings spread out in the air they may be carried by the wind for long distances. They are nocturnal in their habits.

A preliminary investigation of this pest was conducted in 1938-39 by the Assistant Entomologist who was then attached to the Department of Agriculture and, as suggested by him, a series of spraying and dusting operations were conducted in this Estate up to April 1940. These control measures were:—

1. Monthly spraying of the bushes with Tobacco decoction and Fish Oil Rosin soap.
2. Fortnightly spraying of the bushes with Tobacco decoction and Fish Oil Rosin soap.
3. Weekly spraying of the bushes with Tobacco decoction and Fish Oil Rosin soap.
4. Fortnightly dusting with Sulphur (dusting of the racemes).
5. Weekly dusting with Sulphur (dusting of the racemes).
6. Weekly dusting with Tobacco dust.
7. Spraying with Fish Oil Rosin soap followed by dusting with tobacco.
8. Weekly spraying with Nicotine Sulphate solution and Fish Oil Rosin soap.

The results of these experiments were roughly found to be as follows, though systematic pod wort counts could not be taken.

1. *Sulphur dusting*—had practically no effect.

2. *Weekly spraying of tobacco decoction*—had some effect. The racemes in the treated plot showed distinctly much less scabby pods than in the control plot.

3. *Fortnightly and monthly spraying with tobacco decoction.*—There was no appreciable difference between the control plots and the treated plots.

4. *Tobacco dusting.*—Tobacco dust is certainly lethal to thrips and it has been used successfully against thrips on chillies on the plains. In the case of the racemes of the cardamom, as the thrips occur well concealed under the bracts the dust does not reach them to such an extent as a liquid sprayed under pressure.

5. *Nicotine sulphate solution.*—This gave the best results and a marked difference was noticeable between the control plots and the treated ones. The treatment consisted of weekly spraying with 4 ounces of Nicotine sulphate and 1 lb. of fish oil rosin soap in 40 gallons of water (this quantity is for spraying 400 bushes of 1 acre).

Work in Progress at the Research Station

The Research Station is now concentrating its attention on—

1. Life history studies of the pest, and
2. Experimental control measures in the field.

1. *Life history studies.*—A full and detailed study of the life history of the pest, its habits, its seasonal incidence and rate of multiplication and its modes of migration has been taken up and it is hoped that, in a few months, it will be possible to furnish a full account of the modes of migration of the insect and the relation of atmospheric temperature to its rate of multiplication. The Research Station is also on the lookout for parasites and other natural enemies of the pest but none such has been discovered so far, except a small reddish mite which has been found to live in close association with this insect and to destroy its tiny eggs. It is however too early to say whether this mite has any value as a predator.

2. *Control measures.*—Soon after the starting of the Research Station in January 1940, new blocks, each half an acre in extent, with the necessary control plots, were selected for experimental purposes. The plots were demarcated and experiments on control measures were started in April. Spraying with tobacco decoction and fish oil rosin soap, Nicotine sulphate and fish oil rosin soap and sulphur dusting are now being tried systematically. Lime and sulphur treatment is also proposed to be tried

on one or two plots. Arrangements have been made for careful counts to be taken of attacked pods in these plots during the picking seasons.

Conclusion.—It is too early to draw conclusions from the work done so far; but this report would show the lines on which the work is being directed at Pampadampara. With the continued co-operation of Mr. Murphy and the advice of Dr. Harler, Scientific Officer, K.D.H.P. Company, Munnar, and Member of the Council of Research, the Central Research Institute hopes to find out adequate remedial measures to combat the ravages of the pests on this important crop plant.

APPENDIX

Pampadampara Estate

Statement of Rainfall for four years from 1936

	1936	1937	1938	1939
January	Nil	·06″	Nil	1·00″
February	1·15″	·47″	4·30″	·25″
March	2·64″	1·11″	·05″	·45″
April	1·55″	3·56″	3·29″	7·16″
May	8·75″	·85″	4·94″	2·00″
June	7·92″	6·19″	16·50″	10·16″
July	19·77″	24·78″	15·20″	16·04″
August	12·75″	8·09″	8·69″	14·21″
September	6·16″	1·90″	6·07″	6·21″
October	6·80″	13·45″	9·23″	14·15″
November	5·49″	7·12″	1·25″	12·48″
December	1·08″	0·85″	4·21″	·16″

NOTE BY DR. C. R. HARLER

It will be gathered that the work carried out so far has been of exploratory nature, but nevertheless information of value has been obtained. For example, in certain cardamom estates in the Anamallais an annual dusting with sulphur is carried out with, it was considered, beneficial results in reducing pod-wort. The Pampadampara observations do not confirm this, for even weekly dustings have no appreciable effect.

Again, frequent sprayings with tobacco decoction and dustings with tobacco dust, although not economically possible in practice, have shown that these methods of attack generally fail.

The insecticide of most promise so far in nicotine sulphate. One spraying with this solution may cost Rs. 4 per acre, so that a weekly round is quite out of the question on an estate. In a Nelliampathy estate, however, two sprays at a fortnightly interval have been given this October, and pod-wort counts are being kept on the present crop. Further information of practical value should therefore be soon available.

RUBBER FLOORING

The British Rubber Publicity Association has prepared, and recently issued, a pamphlet entitled *The Care and Treatment of Rubber Flooring* which gives full information on this subject.

The correct care of rubber flooring, states the pamphlet, is most important if it is to give good service and maintain its resiliency and attractive appearance. Experience has shown that ordinary cleaning methods are not always applicable to rubber flooring and it is for this reason that the pamphlet has been issued. Careful attention is invited to the instructions given therein, in order to avoid damaging rubber flooring by the hasty application of wrong methods of cleaning.

Copies of the pamphlet may be obtained free of charge on application to the Secretary of the British Rubber Publicity Association, 1, Albert Mansions, Lansdowne Road, Croydon, Surrey.

—*Journal.*

COFFEE CONTROL SCHEME

With the object of keeping internal prices of coffee at their present level, the Government of India are introducing a coffee control scheme, as an experimental measure, for the season 1940-41.

A *communique* issued in this connection says that the coffee industry, which is concentrated in the Provinces of Madras and Coorg, and the States of Mysore, Travancore and Cochin, has lost a considerable proportion of the exports as a result of the war.

The main features of the scheme are:—

A. Registration of all growers owning coffee estates of an aggregate area of 25 acres or more, and of estates owned by such growers;

B. Licensing of coffee curing establishments;

C. Control of the scheme to be in the hands of an Indian Coffee Market Expansion Board, consisting of members of the Indian Coffee Cess Committee, with some additional members. The principal executive officer will be a Government official, appointed by the Central Government;

D. Division of the crop, whether cured or uncured, of each registered estate into two parts, one for internal sale and the other for delivery to a surplus pool, the percentage regulating the division being the same for each estate;

E. The existing cess on exports to be continued for internal sale;

F. All registered growers will be free to sell on the internal market the quota of cured coffee allotted for internal sale, but a licence will be required for the sale of any uncured coffee included in a quota;

G. The balance of the crop to be delivered to the surplus pool, to be controlled by the Board. The Board will arrange for export sales, and all exports otherwise than by the Board will be prohibited. The Board will have power to release coffee from the surplus pool for sale on the internal market, so as to ensure control of prices. Sale proceeds of the surplus pool will be divided proportionately between all growers delivering coffee to it;

H. The Central Government will have power to fix maximum wholesale prices.

The existing powers and duties of the Indian Coffee Cess Committee will be continued by the Board.

It is anticipated that the experimental scheme will also be implemented by necessary legislation in the States concerned.

The export pool is proposed to be dealt with on a system of mutual guarantee, by which the pool will be handled as one indivisible whole, and, as it is cleared, the producers will be credited with a proportionate share of the sale proceeds.

Producers who own less than 25 acres are excluded from the scheme for two reasons; firstly, none of them is interested in the export market; and secondly, it has been found difficult to get them into a system such as this. They represent about 15 per cent. of the total production and will continue as at present to supply the internal market.

As stated by the Commerce Member in the Central Assembly, it was expected that legislation could be introduced in the last session, but a bill could not be got ready in time, and it is pointed out, as the season begins from about the middle of November and lasts till April, immediate action is necessary if the scheme is to be of any benefit. An Ordinance will, therefore, be issued in about a week's time, to be replaced by legislation in the Budget session of 1941.

Although the existing export cess will continue, the yield will naturally be small in view of the restriction of the export market; hence the need to levy a cess or excise on internal consumption.

ELIMINATING INDUSTRIAL FATIGUE: VALUE OF REST PAUSE FOR TEA

As a result of official investigation in Britain it has been found that:—

'There is a widely spread impression that a cup of tea acts as a powerful but harmless stimulant to the flagging energies.

'One large firm visited by us is so convinced of its efficiency that they offer a free cup of tea to every worker in the morning and afternoon work spells and during the dinner hour.'

The growing volume of evidence in favour of the service of a cup of tea to the individual worker during a short 'break', and indeed the necessity of compulsory 'breaks' of this nature, finally received the recognition of British legislators in the New Factory Act which came into force in July 1938. Not in Britain alone, but also in other parts of the world, the benefits of a rest pause with tea are now enjoyed by all classes of labour—factory, mine, farm and office. In India it is only recently that the attention of the industrial world has been drawn to the need for the introduction of rest pauses with tea to employees, and the Indian Tea Market Expansion Board has thus entered on a new phase of its campaign. Experience, though so far limited to a small number of establishments to which the Board have been able to extend their practical help and guidance, shows that these establishments are keenly appreciative of the advantages of an innovation like rest pause with tea. Here is a statement from the manager of a large cotton mill in Coimbatore which is typical of the attitude held by employers with a progressive outlook:—

'We have found that the pause system, during which our labour force, in well-regulated shifts, is allowed to snatch a little rest from their race against the machines and during which the men are refreshed with free cups of tea, is bearing results which more than compensate for the slight expense involved in providing them with tea. I, for one, will continue the system.'

Obviously it pays an employer to allow his staff a few minutes' 'break' with so inexpensive a refreshment as tea, and today when industrialists have to depend on a very high standard of labour efficiency as an offset to increased labour costs, they cannot but recognize the benefits of the rest pause for tea which results in greater efficiency and contentment in their establishments.

The psychological influence of the rest pause, combined with the refreshing and stimulating effect of tea, is conducive to a general improvement in the work and health of the employees. Indeed, there is a deep meaning underlying this incentive to better work provided by this combination of a brief rest with a cup of tea: after an unduly long spell of work human energy is apt to decline sharply towards a 'dead point' when fatigue steps in, and evidence is not lacking to show that fatigue often leads to lower output, absenteeism, carelessness, boredom and even accidents. It is, therefore, in the mutual interests of employers and employees that this fatigue factor, which is inevitable under modern industrial conditions, should as far as possible be eliminated, and to this seemingly difficult problem no simpler solution can be offered than to 'stop for a cup of tea' in mid-work spells.

—*Indian Textile Journal.*

U. P. A. S. I. RUBBER PRODUCT SECTION

Extracts from the draft proceedings of a Meeting of the RUBBER SECTION COMMITTEE of the United Planters' Association of Southern India, held at the Office of the Cochin Chamber of Commerce, Cochin, on 30th November 1940.

Present.—Mr. J. E. Pitcairn (*Chairman*), Messrs. W. G. Craig, H. R. Carson Parker and L. J. T. Polgreen (*Members*), and Lt.-Col. C. H. Brock (*Secretary*).

Proceedings of previous meetings.—The proceedings of the previous meetings held on 1st August at 10-30 a.m. and 3-30 p.m. which had been approved in circulation were taken as read and confirmed.

Imports of Burma Rubber into India.—Before taking into further consideration the proposed Memorandum to the Government, the Chairman reviewed the discussions and correspondence which had taken place since the last meeting of the Committee.

The meeting then proceeded with the consideration of the draft memorandum which it was proposed to submit to the Government of India, copies of which would be submitted to the members of the Advisory panel so that they may be fully acquainted with the views of the producers of rubber in India.

The Committee resolved that the Memorandum, as revised, should be submitted to the Government of India. The Secretary was instructed to complete the final preparation of the Memorandum, in consultation with Mr. F. E. James who might have further advice to offer, and recirculate it to the Committee for final approval.

Madras Factory Act Rules.—Although it was known that only one rubber factory at the present time came under the provisions of the Factory Act, the Secretary was instructed to take steps to approach the Government of Madras to make provision in the Rules under the Act for rubber factories in the same way as provision had been made for tea factories.

Provincial and State War Funds.—The Committee expressed their full sympathy with the aim of the proposals made by the Executive Committee that estates should subscribe to Local Government War Funds through the U.P.A.S.I., but could not see their way to suggesting any fixed rate per acre. Owing to the incidence of taxation and other factors being so varied, the Committee were of the opinion that it should be left to the discretion of the individual companies and proprietary interests concerned to subscribe whatever amounts they feel that they can through the U.P.A.S.I. to the War Funds of the particular Province or State in which their estates are situated.

Rubber Chests Markings.—The receipt of a cable from the South Indian Association in London, dated 20th November 1940, giving instructions as to the correct marking of chests of rubber which was being shipped to the order of the Ministry of Supply, was recorded. It was noted that this had been circulated to all rubber interests and published as a U.P.A.S.I. circular in the *Planters' Chronicle* issue of 7th December 1940.

Before closing the meeting the Chairman welcomed Col. Brock's return to his old post as Secretary of the Association for the duration of the war in relief of Mr. Acaster, and expressed the appreciation of the Committee at his having agreed to return to India for this purpose.

With a vote of thanks to the Chair, and to the Cochin Chamber of Commerce for so kindly placing their board-room at the disposal of the Committee for this meeting, the meeting closed.

COONOOR, C. H. BROCK,
9th December 1940. *Secretary.*

'WE THINK YOU OUGHT TO KNOW . . . .'

Under the above title, the National Safety First Association has issued a pocket booklet which will prove extremely useful to works' operatives. As is explained in the foreword, 'although factories are not especially dangerous places you can easily get hurt', and the moral of prevention is set out in tersely worded examples, illustrated with humorous sketches.

Here is one extract from the contents:—

'The man who hooks a load on a crane makes it as secure as he knows how. He's an expert and that's his job. But loads sometimes slip. Not often, but too often for you to take a chance by walking or standing underneath. Even if you break its fall you will probably get broken yourself. So stand from under.'

And here is another:—

'Almost any moving part of machinery, however smooth, has the power to seize hair and pull it out by the roots. It can also whip you up by your tie, scarf or any loose part of your clothes. So have no loose ends. Wear all your hair under your cap.'

SHADE TREES ON TEA GARDENS

From Tocklai Experimental Station is issued a singularly useful Memorandum No. 12 being *The Species of Shade Trees Used on Tea Gardens*, being a series of drawings and descriptions for use in identification. The compilers are Mr. Eric J. Winter and Mr. Moneswar Bora and they have made a splendid job of it. Both the young and the old Planter will derive benefit from it, the former by way of new knowledge and the latter by way of a brushing up of what often is lost to the conscious memory.

—P. J. & A., Calcutta.

RUBBER AND QUOTA PRICES

The approximate current prices in Kottayam on 9th December were:—

Rubber, including export licenses ...	55.50 cents a lb.
Rubber Export Quota	2.00 cents a lb.
1st quality rubber alone	52.00 cents a lb.

CARDAMOM PRICES AT BODINAYAKANUR

The following prices are quoted by the Cardamom Planters' Co-operative Bank Ltd., as current on 14th December 1940:—

	per Thulam of 810 tolas weight
European Green No. 1 ...	Rs. 36 0 0 to Rs. 42 10 0
Do. No. 2 ...	Rs. 30 2 0 to Rs. 35 12 0
Motta Green	Rs. 43 2 0 to Rs. 46 4 0

COMPANY NOTES

NILGIRI NEERGUNDI

The Fourteenth Annual General Meeting of Shareholders of the Nilgiri Neergundi Estates Co., Ltd., was held in Calicut on Saturday the 30th November 1940. Mr. W. K. M. Langley, O.B.E., M.L.A., who presided, in the course of his address, said:—

'The net profit for the year, after providing for depreciation and debenture interest, was Rs. 31,130 as against Rs. 16,023 in 1938-39.

'The balance amount in our Profit & Loss Account now stands at Rs. 1,13,626 and, with your approval, the Directors propose to transfer Rs. 80,000 of this to a Debenture Redemption Reserve.

'As Shareholders are aware, our outstanding debentures amount to Rs. 1,69,400 and repayment of these will commence in 1945. In view of this we are anxious to create, and gradually invest a reserve sufficient for the repayment. Meanwhile, of course, we shall be only too glad to buy in and redeem any debentures that come on to the market at a reasonable price.

'I can well appreciate that the Directors' decision not to recommend a dividend on the Ordinary Shares will come as a disappointment to Shareholders, but I am certain Ordinary Shareholders (and Preference Shareholders) realise, as well as we do, that we must take steps, when we can, to build up a fund to pay off these debentures, the interest and tax on which absorbs so much of the Company's profit.

'The season's crop was 96 tons and the average net price obtained of Rs. 41.45 per cwt. was the highest since 1933-34. The estimated crop for 1940-41 is 100 tons, the Assortment of which (estimated at 70 tons) has been sold forward at Rs. 33 per cwt. cured ex bags Coimbatore.

'As you are aware, a scheme for the control of Coffee is now being considered by the Government of India, and we may expect an announcement at any moment. As the scheme is intended for the benefit of the industry as a whole, we have not opposed it, but, so long as the Indian and U.K. markets remain open for Indian Coffee, such a scheme will be of no benefit, in fact very much the reverse, to high grade coffee produced in the Nilgiris and the Bababudin district of Mysore. These high quality Coffees, which include this Company's production, have a market in U.K. and India, which enables them to command a fair price, even though average and low quality Coffees might be almost unsaleable. It is to be hoped, therefore, that this control will not last a moment longer than absolutely necessary unless those charged with its administration can devise a means of securing to the high grade producer a return commensurate with the standard that he has created for his Coffee in markets which appreciate and are prepared to pay for its superior quality.

'We continue to pluck and sell our green leaf locally. During the year under review we sold 5,04,702 lbs. green leaf realising Rs. 21,029. In 1940-41 we hope to sell 6,00,000 lbs. green leaf at an average of 10 pies per lb.

'Under the Articles of Association the Directors are entitled to a remuneration of Rs. 3,500 per annum, but, as in past years, the Directors do not wish to draw this amount and will be quite content with the same remuneration as drawn in recent years, Rs. 2,250.'

The following resolution was put to the meeting and carried unanimously:—

'That the Directors' Report and audited Accounts for the year ended 30th June 1940, be and hereby are approved and adopted, that the proposed transfer of Rs. 80,000 from Profit and Loss Account to a Debenture

Redemption Reserve be approved and confirmed, and that the payments of the Cumulative Preference Dividend of 7%, free of income tax made on 31st December 1939 and 30th June 1940 be approved and confirmed.'

Mr. Congreve was re-elected as a Director.

TREE-POISONING WITH SODIUM ARSENITE

Killing of rubber trees with sodium arsenite in preparation for replanting is being frequently adopted. It is usually carried out on the standing trees by the 'frill-girdling' method.

It is also possible to speed up the decay of the root system of a felled tree by the use of sodium arsenite, introduced into holes bored in the surface of the stump, says the R.R.I. *Planters' Bulletin.* It may be useful to do this, as an alternative to removal of the roots, so as to prevent the spread of root disease in a replanted area.

Poisoning with sodium arsenite is without any danger of damage to the new stand, for the arsenic in the tissues of the killed trees (timber or roots) becomes fixed in the soil when they rot away, and is not available in harmful amounts to plants growing on the area.

The position is quite different when poisoning is used not in preparation for replanting, but for thinning-out an area of rubber trees. *The stump poisoning method should on no account be used in thinning out.* The poison introduced into the stump of the felled tree is liable to find its way into neighbouring standing trees, and to kill or severely damage them. This happens because natural root-grafting in a stand of rubber trees is much commoner than is usually supposed.

The roots of neighbouring trees come into contact with one another as they spread through the soil. At the places where they touch they sometimes grow together and form a natural graft. At this graft the tissues of the root systems of two trees are in organic connection and sap can pass from one tree to the other.

—*Rubber Age.*

COIR WRAPPERS FOR RUBBER

The Department of Industries and Commerce, Ceylon, is making an effort to encourage the use of jute gunnies, locally made chests and coir wrappers for the purpose of packing rubber in place of plywood chests.

This is being done in accordance with the opinion of the Secretary of State for the Colonies. who has expressed the desirability of restricting the use of imported plywood chests in order to economise on the foreign exchange. It is learned that he has suggested to the Rubber Trade Association of London and Rubber Growers' Association the use of burlap or jute gunnies as a substitute for plywood.

In view of the fact that the standard contract of the London Rubber Trade Association does not allow the sale of rubber in bales the Secretary of State has requested the Association to amend the contract so as to permit the importation of rubber packed otherwise than in plywood. The dealers in Britain show no disinclination to accept rubber in bales, and as a matter of fact, the Government buyers already accept rubber so packed.

The possibility of using coir wrappers for packing rubber in Ceylon is being investigated by the Director of Commerce and Industries at present.

—*Ceylon News.*

THE SUPREME SACRIFICE

O valiant Hearts, who to your glory came
Through dust of conflict and through battle-flame;
Tranquil you lie, your knightly virtue proved,
Your memory hallowed in the Land you loved.

Proudly you gathered, rank on rank to war,
As who had heard God's message from afar;
All you had hoped for, all you had, you gave
To save Mankind—yourselves you scorned to save.

Splendid you passed, the great surrender made,
Into the light that nevermore shall fade;
Deep your contentment in that blest abode,
Who await the last clear trumpet-call of God.

Long years ago, as earth lay dark and still,
Rose a loud cry upon a lonely hill,
While in the frailty of our human clay
Christ, our Redeemer, passed the self-same way.

Still stands His Cross from that dread hour to this
Like some bright star above the dark abyss;
Still, through the veil, the Victor's pitying eyes
Look down to bless our lesser Calvaries.

These were His servants, in His steps they trod
Following through death the martyr'd Son of God;
Victor He rose; victorious too shall rise
They who have drunk His cup of Sacrifice.

O risen Lord, O Shepherd of our dead,
Whose Cross has bought them and whose Staff has led
In glorious hope their proud and sorrowing Land,
Commits her Children to thy gracious hand. *Amen.*

A NEW PHOSPHATE FERTILIZER

The following is an extract from '*Potassium Metaphosphate,* A Potential High-Analysis Fertilizer Material', by S. L. Madorsky and K. G. Clark, appearing in *Industrial and Engineering Chemistry*:—

A practically water-insoluble and non-hygroscopic form of potassium metaphosphate can be obtained by the action of phosphoric acid on potassium chloride. Analyses made in accordance with the Official Methods of Analysis of the A.O.A.C. for citrate-insoluble phosphoric acid and for potash in mixed fertilizers indicate that, owing to the solubility of this metaphosphate in ammonium citrate and oxalate solutions, the phosphorus and potassium are readily available to plants. Vegetative tests support this conclusion. The high nutrient concentration of potassium metaphosphate [39.87 per cent. potassium oxide (K_2O) plus 60.18 per cent. phosphoric oxide (P_2O_5)] should permit important economies to be made in bagging, handling, shipping, storage, and tax charges per unit, and thus make it particularly well adapted to economic distribution over wider areas than other fertilizer materials.

MARKET REPORT AND PRICES

Calcutta (*Issued by the Calcutta Tea Brokers' Association*).

Sales Nos. 23 and 24 were held on 2nd, 3rd, 9th and 10th December 1940.

DESCRIPTION	Season 1940-41			Average on same date	
	Sale No. 23	Sale No. 24	Average to date	In 1939	In 1938
	As. p.	As. p.	As. p.	As. p.	As. p.
With Export Rights ...	14 5	14 0	12 9	12 9	9 5
For Internal Consumption:—					
Leaf Teas ...	4 1	4 2	3 11	5 1	4 1
Dusts ...	4 11	5 1	4 10	4 9	4 4
Green Teas ...	5 9	5 10	6 5	6 0	6 3

RUBBER—London Rubber on December 16, 1940, 12*d*.

Colombo (*Issued by the Colombo Brokers' Association*).

Average prices obtained (in cents).

SOUTH INDIAN TEA SALES

	Dec. 3 & 10, 1940
Kylasanaad ...	... 75
Naduar ...	... 82

RUBBER SALES

	Dec. 5, 1940
Ribbed Smoked Sheet ...	58 to 58¼
Contract Crepe ...	57 to 57½
Mottled Brown Latex Crepe	53 to 56½
Brown Scrap Crepe ...	50 to 50½

Madras (*As on 19th December* 1940. *Issued by Messrs. Paterson & Co.*).

The general undertone in the share market during the period under review has remained remarkably steady although prices in intermarket leaders have suffered a temporary setback on account of profit-taking. As we write markets are not quite so active but this is probably due to the approach of the long Christmas holidays. One of the chief features of the fortnight has been the extreme firmness in the security market. This, of course, is not surprising in view of the great successes of our Army in the middle East. In so far as the local market is concerned, the general undertone is very steady but in some sections notably textiles, prices are slightly below their recent highest. In the miscellaneous section, Mysore Chemicals have met with speculative support the price advancing to over Rs. 15. Other Mysore industrials were quiet while not much activity was seen in sugars.

RUBBER

Since our last report, a large number of companies have announced interim or maiden dividends and a list of these announcements is given below:—

Thamarapally	... 10% Interim.	Velliamuttams	... 7½% Interim.
Cochin Malabars	... 5% 2nd Interim.	Coorg Rubbers	... 15% ,,
Nellithanams	... 5% Interim.	Kalpettas	... 10% ,,
Be Be Rubbers	... 5% ,,		

Undoubtedly, rubber companies are now making very considerable profits and a greater interest if somewhat belated is now again apparent in this section. In fact, very considerable gains have taken place in the majority of rubber shares since our last report. Buyers, rendered more confident by concrete proof of the more prosperous conditions prevailing in this industry have come into the market only to find that there are no sellers at last quoted rates. The chief rises have naturally been in those companies which have announced dividends. Coorgs from around Rs. 28-8 advanced to Rs. 30 ex dividend, Kalpettas from Rs. 18-8 cum to Rs. 19-8 ex, Velliamuttams from Rs. 19 cum to Rs. 19-8 ex dividend. On the other hand, Midlands and Rajagiris were unaltered at around Rs. 5 ex dividend. Cochin Malabars have met with good investment support and at the close business was transacted at up to Rs. 6-14. Malankaras were also better at Rs. 34-8 and Thirumbadis at Re. 1-12. Small investment orders were also attracted to Vaikundams at Rs. 8. Among the lower priced shares, Cottinads were higher at Rs. 5 ex dividend, Be Be at Rs. 6-8 cum dividend and Manalurs at Rs. 5 with Peninsular Plantations at Rs. 4-5.

TEAS

There is still a sound investment enquiry for most of the shares of this section, but in many cases there were still sellers over at the close, notably Peermades being offered at Rs. 27, Periakaramalais at Rs. 17-12 and Devasholas at Rs. 6-12. A fairly heavy turnover has been reported in United Nilgiris at Rs. 116 cum dividend while a line of Nonsuch Teas changed hands at Rs. 20. It is a very long time since business was last reported in these shares. Vellamalais were also firm at Rs. 11-8 buyers, and Highland Produce at Rs. 27-12. Chembra Peaks record a gain of one anna at Rs. 3-5, while Nilgiri Neerungundis attracted fair speculative support at Re. 1-2.

EXPERIMENTS IN BEE-CULTURE

Under the above title, Mr. S. R. Narayana Ayyar reprinted all his interesting articles which he wrote for the *Planters' Chronicle* and which appears in fourteen issues of this paper from 27th November 1937 to 3rd September 1938. Though these articles, finally revised and added to, were published in book form shortly after with a foreword by Sir R. K. Shunmukham Chetty, K.C.I.E., Dewan of Cochin, we do not think that this edition has ever been noted in these pages. Its publication is, at any rate, unique in one respect, as it is the first occasion on which articles in the *Chronicle* have ever been reprinted as a book. Embellished, as it has been with a frontispiece and twenty-three reproductions of photographs showing various bee-keeping operations, a useful reference index and a dozen blank pages for the bee-keeper to make his own notes and personal observations, it forms a handy text-book for the would-be bee enthusiast. As the lines on the title page say 'The successful apiarist is he who cleverly outwits the bee', and this little book goes a long way to instruct him how to outwit the bee. Copies can be obtained for Re. 1-8-0, postage 4 annas extra, from S. V S. Vasan, Bee-keeper, Coonoor, Nilgiris.

TEA QUOTA PRICES

The Quota prices ruling in South India on 18th December were.—

Tea Export Rights	10 annas 3 pies per lb.
Production Rights ...	1 anna 8 pies per lb

FORTNIGHTLY RAINFALL STATEMENT

November 24, 1940 to December 7, 1940—(Inclusive).

(Stations are arranged in order alphabetically south to north, and those not in planting districts are shown in small capitals.)

Stations	First week	Second week	Prev. from 1-4-'40	Total	Stations	First week	Second week	Prev. from 1-4-'40	Total
2. Kaltburitty ...	1·44	0·85	116·08	118·37	25. Kotagiri ...	4·64	N.R.	58·95	...
3. Kallar B'dge	3·50	5·16	150·50	159·16	26. Ootacamund...	2·17	N.R.	48·86	...
4. Koney ...	3·91	0·60	123·17	127·68	27. Yercaud ...	1·05	N.R.	53·72	...
8. Twyford ...	2·44	0·69	251·55	254·68	30. Devarshola T.E.S. ...	1·35	0·13	74·39	75·87
9. Pettimudi ...	1·49	0·87	308·28	310·64	31. CALICUT ...	3·27	N.R.	114·52	...
10. Kalaar ...	2·26	0·15	250·39	252·80	32. Kuttiyadi ...	8·86	N.R.	140·41	...
11. Chittavurrai...	5·86	0·86	59·89	66·61	33. Vayitri ...	3·75	N.R.	169·61	...
12. BODI'KANUR ...	3·30	N.R.	28·81	...	34. Manantoddi...	1·61	N.R.	110·05	...
13. COCHIN ...	1·92	N.R.	120·66	...	35. Bilgiris ...	2·89	1·08	79·90	83·87
14. Mooply ...	4·49	0·32	130·67	135·48	38. Pollibetta ...	2·00	0·02	78·42	80·44
15. Pachaimallai	2·19	1·22	145·48	148·89	39. Coovercolly ...	1·84	...	89·24	91·08
16. Mudis ...	4·48	0·72	207·72	212·92	41. Kadamane ...	0·40	0·03	254·31	254·74
17. POLLACHI ...	2·57	N.R.	42·13	...	43. Merthisub'gey	1·10	...	130·39	131·49
19. Ropeway Waterfall ...	2·27	3·39	97·46	103·12	45. Balehonnur ...	0·99	...	123·15	124·14
21. Kerala Estate	1·54	0·18	163·40	165·12	46. MANGALORE ...	1·34	N.R.	146·85	...
22. Naduvattam	3·07	N.R.	113·98	...	47. MADRAS ...	1·18	N.R.	41·75	...
24. Coonoor ...	6·05	N.R.	51·86	...					

N.R. = No Return Received.